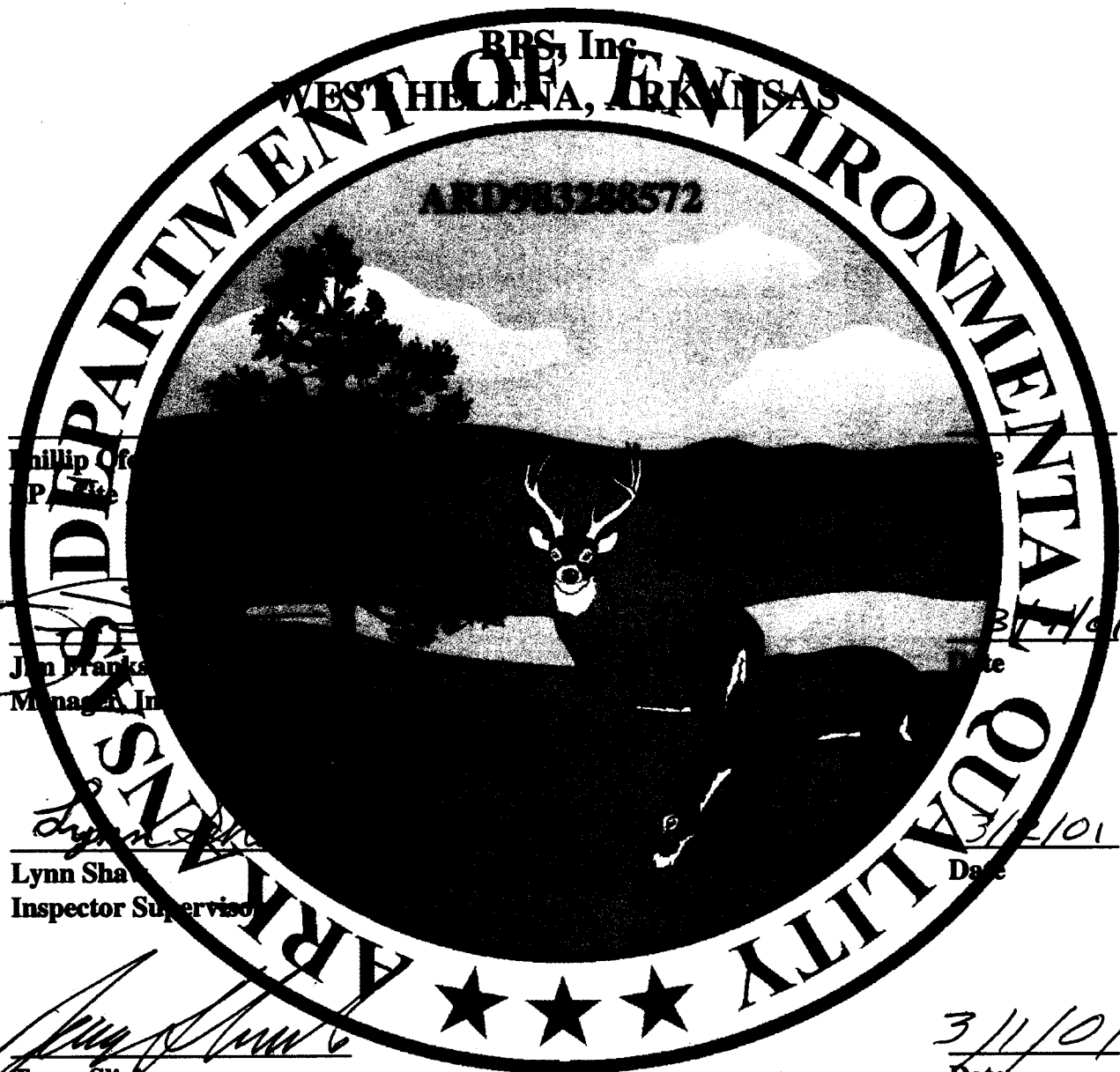


PRELIMINARY ASSESSMENT/SITE INSPECTION  
FOR



Phillip Of  
IP, Inc.

Jim Frank  
Manager, In

Lynn Sha  
Inspector Supervisor

Terry Sligh  
Inspector  
State Project Manager

Date



926635

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B	CHEMICAL DATA SUMMARIES
C	SAMPLE RECEIPTS
D	TRAFFIC REPORTS AND CHAIN-OF-CUSTODY FORMS

## **1.0 INTRODUCTION**

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 and the Superfund Amendments and Reauthorization Act (SARA) of 1986, the Arkansas Department of Environmental Quality (ADEQ), Hazardous Waste Division, Inactive Sites Branch, conducted an Preliminary Assessment/Site Inspection (PA/SI) at the BPS, Inc. (ARD983288572) site in West Helena, Phillips County, Arkansas.

### **1.1 Purpose and Objectives of the PA/SI**

The PA/SI is a combined phase of investigations in the EPA's ongoing screening process of evaluating hazardous waste sites for further action in the Superfund program. The purpose of this investigation was to collect information on the BPS, Inc. site sufficient to assess the threat posed to human health and the environment, to determine the need for additional action under CERCLA/SARA or other authority, and to support site evaluation using the Hazard Ranking System (HRS). The investigation included reviewing available file information, sampling environmental media, evaluating and documenting HRS factors, and collecting additional non-sampling information.

### **1.2 Scope of Work**

The PA/SI Scope of Work focused on defining the nature and extent of hazardous substances in the soil exposure pathway and the surface water migration pathway. Specific surface soil sample and sediment sample locations were selected for this purpose, and to determine attribution to site operations.

## **2.0 SITE CHARACTERISTICS**

This section addresses the site location and description, operational history, previous investigations and regulatory involvement, waste characteristics, and other site concerns.

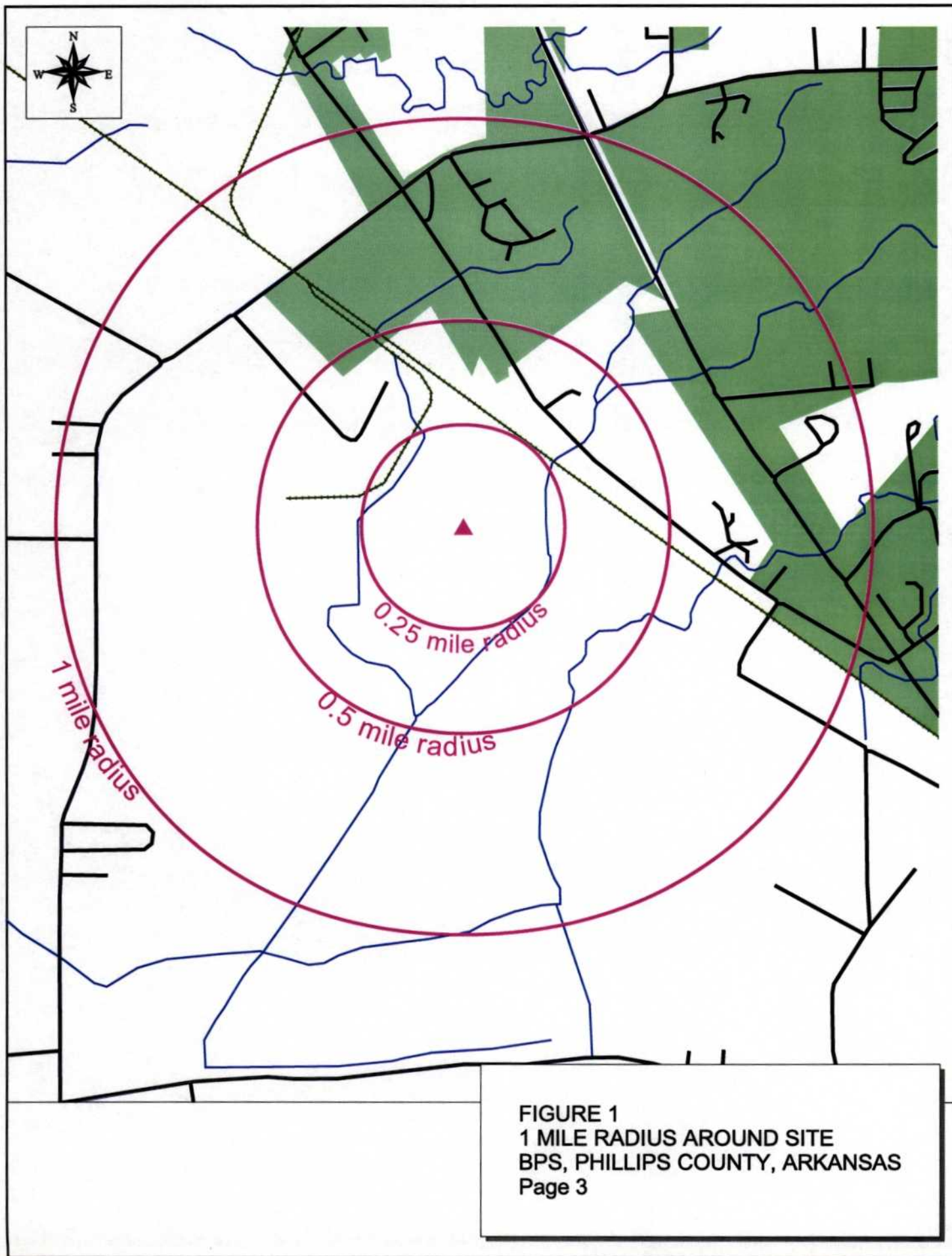
### **2.1 OPERATIONAL HISTORY**

The BPS site is located at 794 Phillips Road 311, in West Helena, Phillips County, Arkansas (Figure 1; Figure 2; Figure 3). The geographical coordinates of the site are 34° 30' 58" latitude North and 90° 39' 03" longitude West (Reference 1). The site is bordered on all sides by agricultural land.

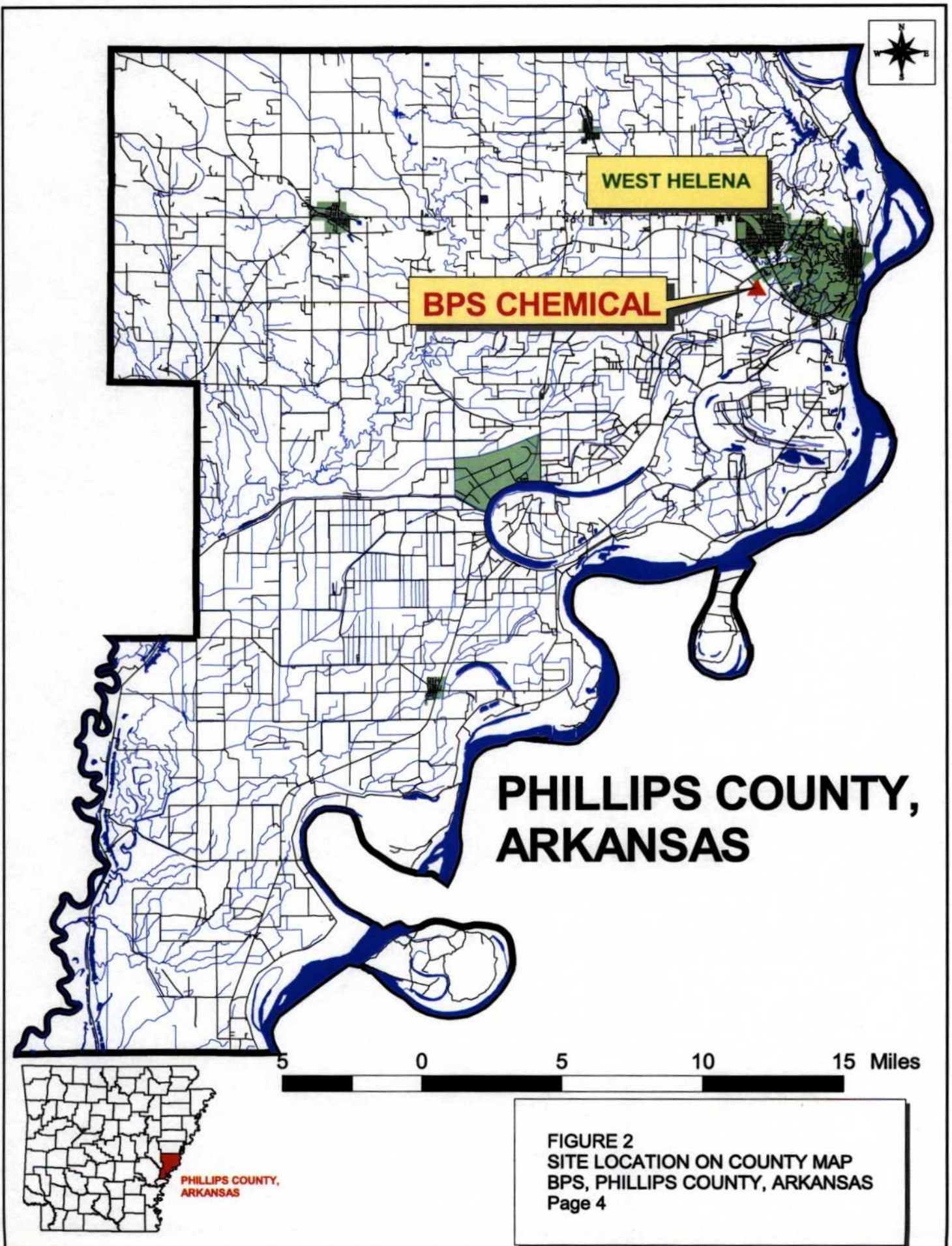
BPS is an active pesticide repackaging plant. The facility consists of BPS Unit 1 and BPS Unit 2. Large volume containers (supersacks and drums) containing various pesticides are received by the facility. BPS repackages these bulk containers into retail-size packages. Pesticides are not manufactured on site. The facility is currently owned by the Bartlo family. Alan Bartlo is president of BPS.

### **2.2 WASTE CHARACTERISTICS AND REGULATORY INVOLVEMENT**

On May 8, 1997, BPS Unit 2 employees were unloading a trailer of supersacks containing azinphos-methyl pesticide when one (1) supersack was observed to be smoldering. Facility employees were evacuated while the West Helena Fire Department responded to the incident. While firemen were making entry into the building, an explosion occurred killing three (3) of the firemen. The EPA Region

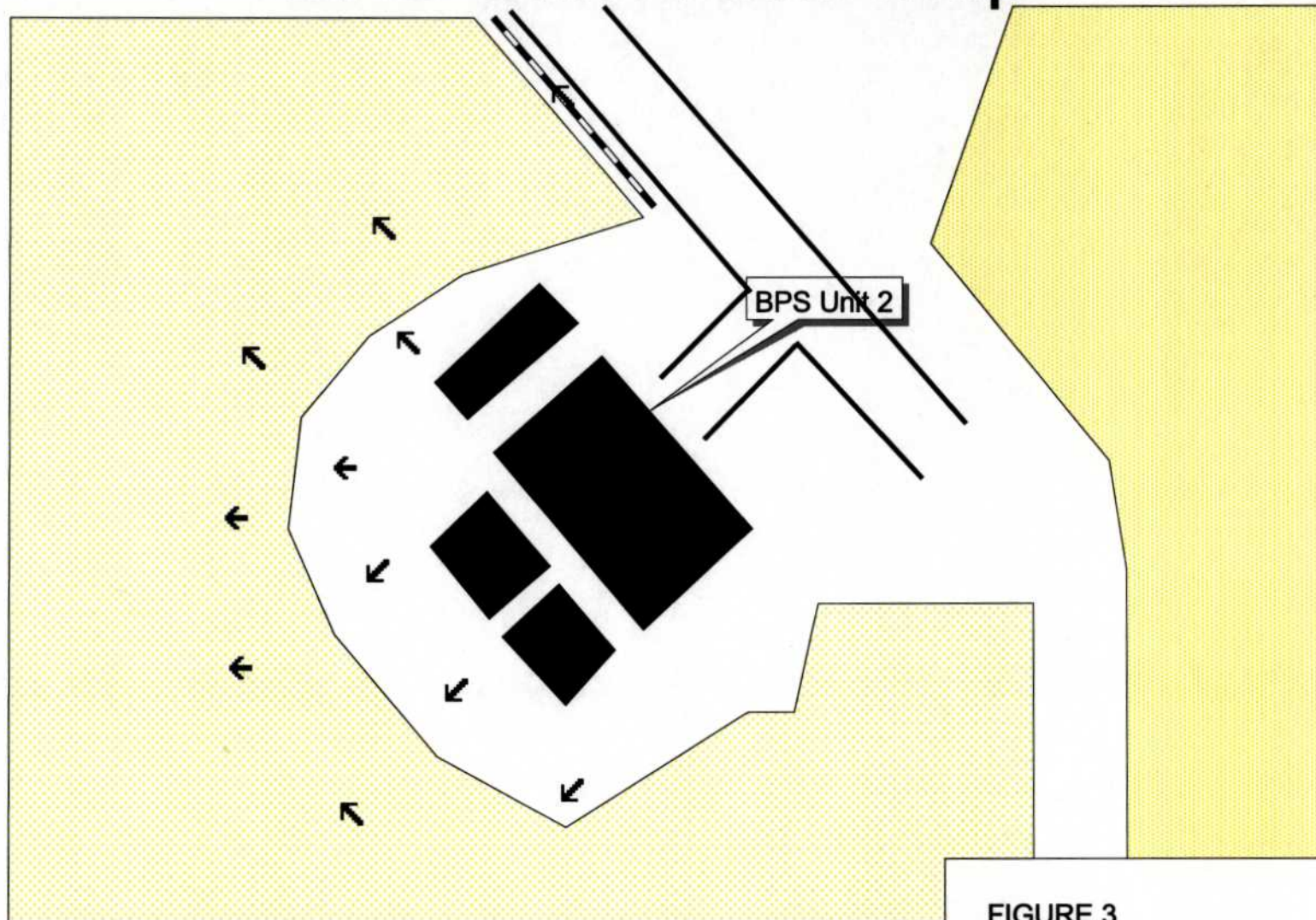
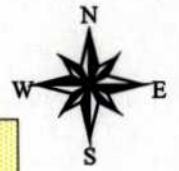








# BPS Unit 2 Site Map



## LEGEND

-  Farmland
-  Surface flow direction
-  Ditch

FIGURE 3  
BPS UNIT 2 SITE MAP  
PHILLIPS COUNTY, ARKANSAS

6 Superfund Technical Assessment and Response Team responded to the emergency and ensuing fire along with various other federal and local government agencies, surrounding fire departments and consultants. A full account of the response and representatives present is listed in Reference 1.

Areas downstream from the facility were bermed to collect contaminated water generated from the facility fire. The water was eventually contained in frac tanks for storage until disposal. An emergency hazardous waste treatment permit was issued by ADPC&E (ADEQ) for the treatment of approximately 80,000 gallons of contaminated water generated during the fire. Following the emergency, soil samples were collected from the facility and surrounding areas. Analytical results were not available for inclusion into the TWP. Environmental investigation and remedial activities were conducted by OHM under contract with BPS. Consent Administrative Order (CAO) LIS 97-106 was signed and issued on August 26, 1997 to address remaining wastes left on site.

### **3.0 PATHWAY ASSESSMENT**

This section characterizes the environmental pathways and associated targets of potential contaminant migration from the site.

#### **3.1 GROUNDWATER MIGRATION PATHWAY**

##### **3.1.1 Groundwater Characteristics**

Eastern Arkansas is underlain by Cretaceous age through recent sedimentary deposits with small areas of igneous intrusions of Cretaceous age. Eastern Arkansas is dominated by Quaternary terrace and

alluvial deposits with minor exposures of Tertiary units which underlie the Quaternary age material (Reference 3).

West Helena is located at the southern end of the alluvial plain. In the alluvial plain, the pre-Quaternary units, ranging in age from Ordovician to Tertiary, are truncated and blanketed by Quaternary alluvium, except on Crowleys Ridge where Tertiary units crop out or are capped by older Quaternary deposits. The alluvial aquifer serves as the major sources of groundwater in the area. It is composed of sand and gravel in the Quaternary alluvium. The aquifer obtains a maximum thickness of about 150 feet on the west side of Crowleys Ridge and a maximum thickness of about 200 feet of the east side of Crowleys Ridge. The alluvial aquifer is underlain by the Jackson-Claiborne clay. This unit reaches a maximum thickness of about 500 feet and contains the Jackson and upper parts of the Claiborne Group. The Jackson Group contains mostly dense clay and the Claiborne Group contains a silty clay with some clay lenses. This unit acts as a confining bed under the alluvial aquifer (Reference 5).

### **3.1.2 Groundwater Receptors**

According to the United States Geological Survey, there are no groundwater wells located on the property or immediately down gradient of the site. Groundwater samples were not collected for the PA/SI as this pathway does not appear to contribute significantly to the overall HRS score.



## **3.2 SURFACE WATER MIGRATION PATHWAY**

### **3.2.1 Surface Water Characteristics**

The BPS site lies within the Delta Region of the Gulf Coastal Plain Physiographic Province.

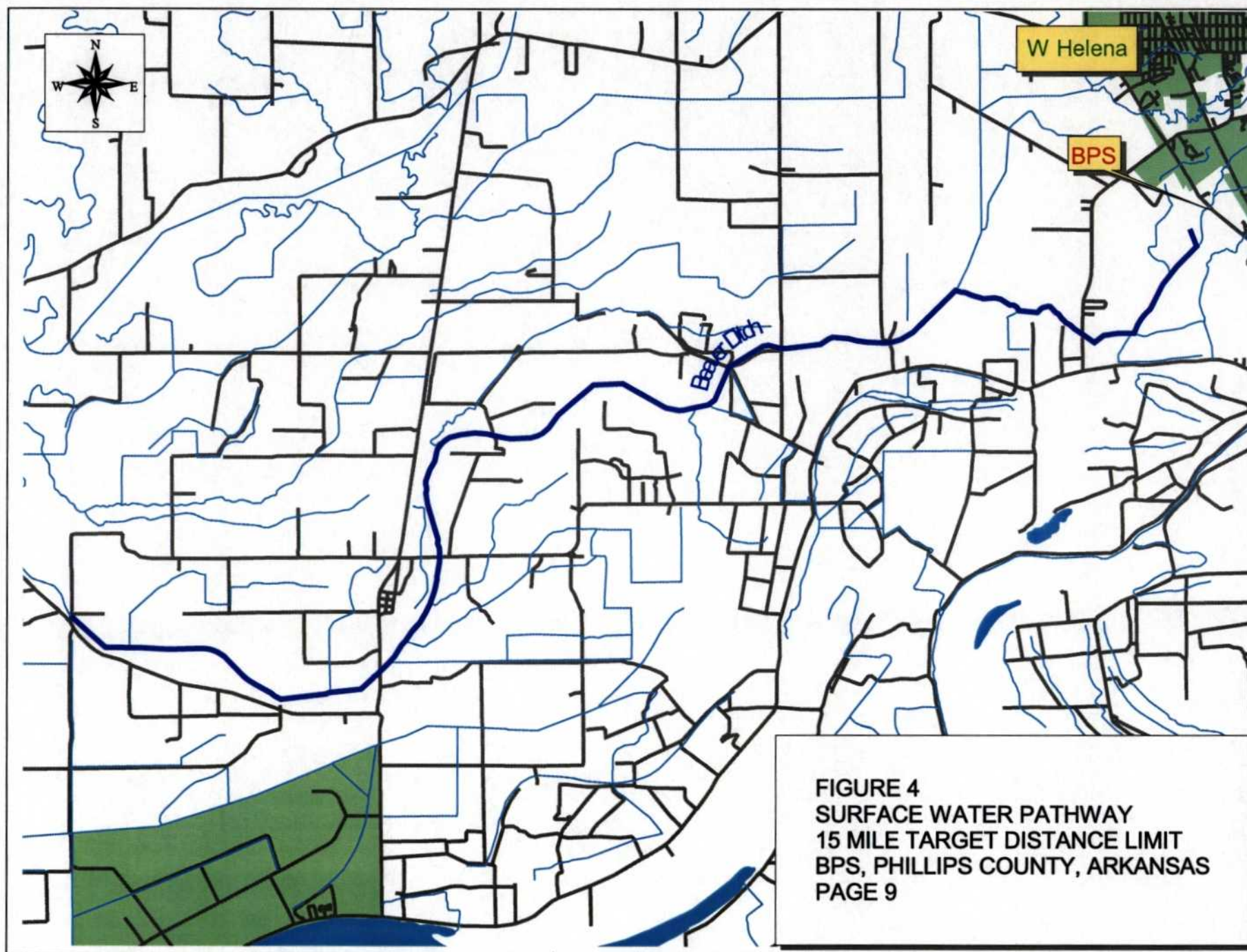
Topography in Phillips county can be divided into three main areas. These areas include level to gently undulating bottom lands, the moderately steep to steep Crowley Ridge, and level to moderately sloping upland plain west of Crowley Ridge (Reference 4). Flood frequency data was not available for the BPS location.

Topography on site is relatively flat. Surface water leaving the site flows in a south/southwesterly direction for approximately 3.25 miles through an unnamed intermittent stream before entering Beaver Bayou. Surface water continues to flow in Beaver Bayou in a south/ southwesterly direction for the remainder of the 15-mile Target Distance Limit (TDL). Surface water eventually enters into Big Creek well beyond the TDL (Figure 4).

### **3.2.2 Surface Water Receptors**

No flow data or comparable data is available for Beaver Bayou. However, Beaver Ditch has a drainage area of approximately 16 square miles at the intersection of the intermittent stream and Beaver Ditch (Figure 4).

Designated uses have been established for streams within 15 miles downstream of the site. These include primary and secondary contact recreation, and perennial and seasonal fisheries (Reference 6).



No wetland areas have been identified using USGS 7.5 minute topographic maps within 15 miles downstream of the site within the surface water drainage pathway.

The Arkansas Natural Heritage Commission maintains a database on the status and location of elements of special concern in Arkansas. An element of special concern includes sensitive species, natural communities, or colonial bird-nesting sites. There is one (1) element of special concern within a four (4) mile radius of this referenced location and 41 elements of special concern within a 15-mile radius of this referenced location. Three (3) Federal managed areas occur within a 15-mile radius of the site. Specific elements are listed in Reference 7.

The City of West Helena relies on the West Helena Water Works for drinking water supply. Four (4) groundwater wells located in the city of West Helena at depths of approximately 600 to 800 feet supply the city with water.

### **3.3 SOIL EXPOSURE PATHWAY**

#### **3.3.1 Soil Description**

Surface soils in Phillips County consists mainly of alluvium and loess. Most alluvium is located in the southern part of the county and most loess is located in the northern part of the county. Two (2) soil series exist within the area of the site location. These include the Convent and Jeanerette series soils. Convent silt loam soils are located on young natural levees and alluvial fans at the foot of Crowley Ridge. Convent silt loam is typically dark grayish-brown silt loam about seven (7) inches thick.

Material beneath consists of stratified layers of grayish-brown, dark-gray, and gray, mottled silt loam.

Permeability is moderate, and the available water capacity is high (Reference 5).

Jeanerrette silt loam soils are poorly drained soils occurring in slight depressions on uplands. The surface layer is silt loam about 16 inches thick. The upper four (4) inches is very dark grayish-brown, and the lower 12 inches is black. The upper part of the subsoil is light brownish-gray, mottled silty clay loam about 27 inches thick and the lower part is light brownish-gray, mottled silt loam about 17 inches thick. Permeability is moderately slow and the water capacity is high.

### 3.3.2 Surface Soil Receptors

The BPS site is active employing 65 people. The site is located within an area of mixed commercial property and agricultural land. No schools or day cares are known to exist within 200 feet of the site.

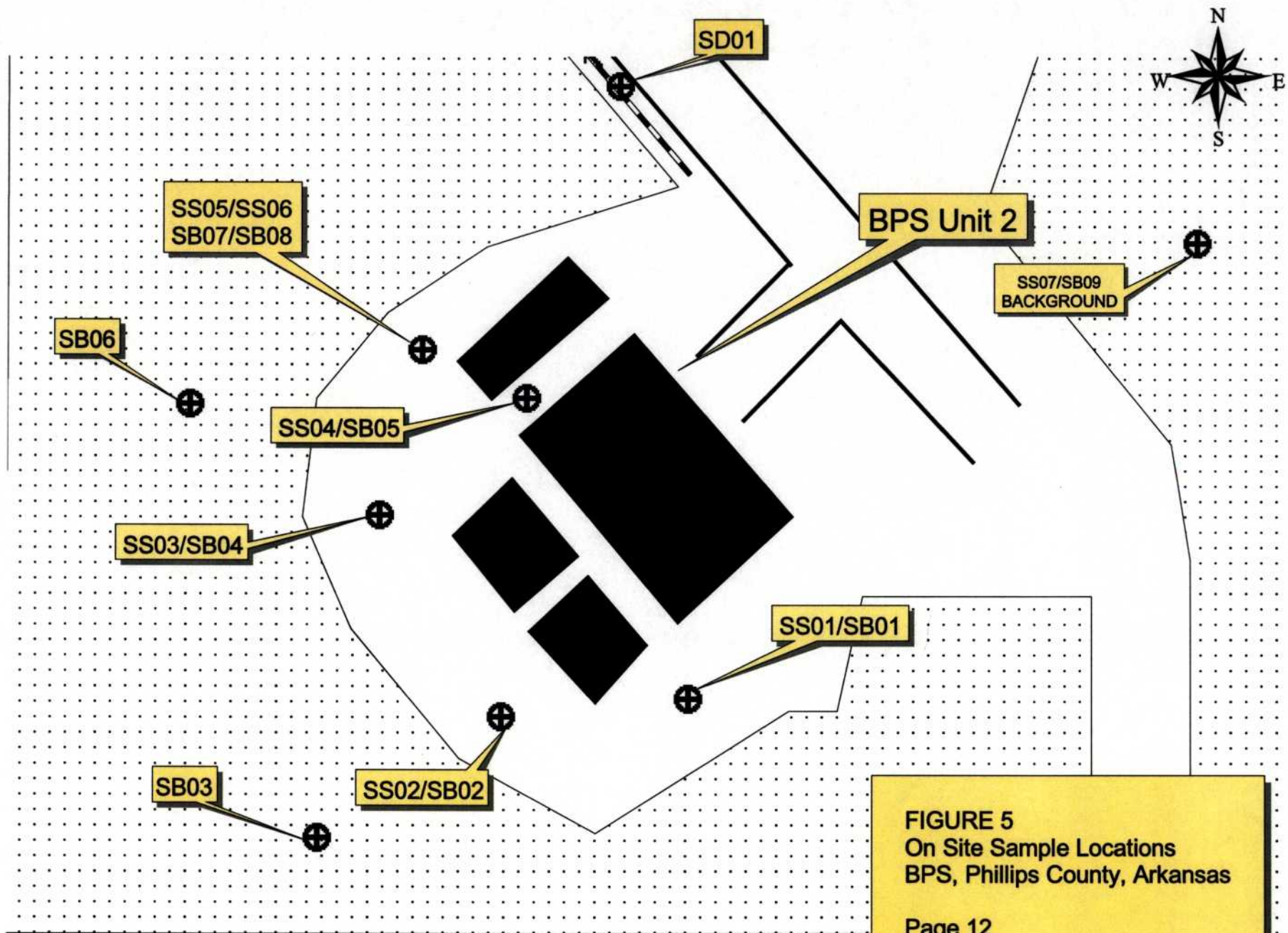
Population around BPS site is listed in Table 1.

**TABLE 1**  
**POPULATION AROUND BPS SITE**

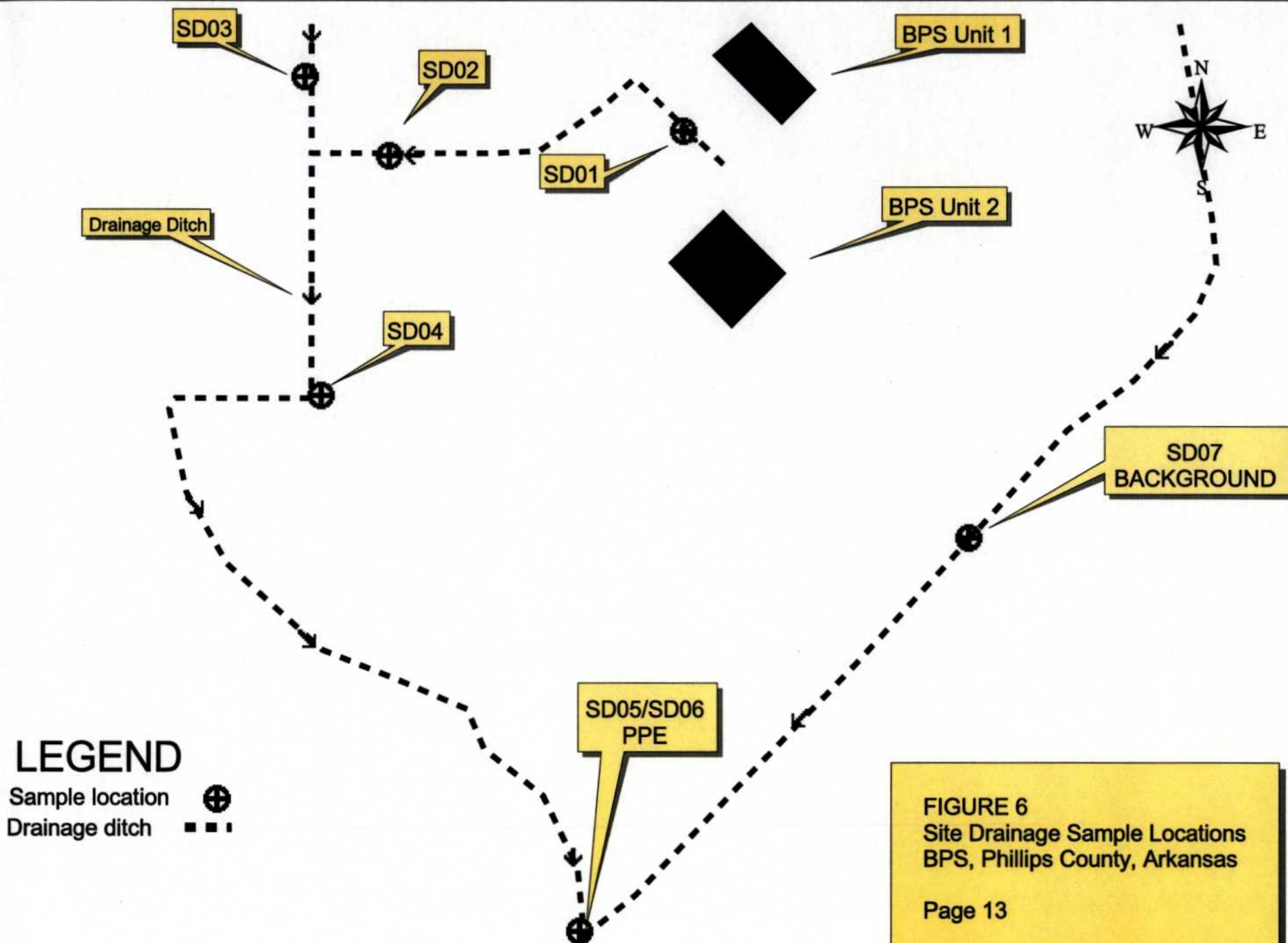
POPULATION BETWEEN	POPULATION WITHIN
0 - 0.25 miles = 35	0.25 miles = 35
0.25 - 1 mile = 71	1 mile = 106
1 - 2 miles = 696	2 miles = 802
2 - 3 miles = 1660	3 miles = 2,462
3 - 4 miles = 2463	4 miles = 4,925

Reference 8





**FIGURE 5**  
On Site Sample Locations  
BPS, Phillips County, Arkansas



### **3.4 AIR MIGRATION PATHWAY**

The site is covered in vegetation with no apparent dust dispersion. Air samples were not collected for the SI since this pathway does not appear to contribute significantly to the overall HRS score.

## **4.0 ANALYTICAL RESULTS**

This section addresses SI sampling methodology and SI analytical results.

### **4.1 Sampling Methodology**

ADEQ conducted an SI sampling event at the BPS site on September 12, 2000. Samples were collected at the site to: (1) define site waste characteristics, (2) attribute hazardous substances to site operations, (3) establish representative background levels, and (4) provide sufficient data for the HRS package. The sampling strategy was based on historic operations, the soil exposure pathway, and the surface water pathway. Areas of possible contamination were targeted for surface soil, subsurface soil, and sediment. Twenty-three (23) surface soil, subsurface soil, and sediment samples were collected during the SI sampling event (Figure 5, Figure 6) (Table 2) (Reference 2). All 23 samples were analyzed for Target Compound List (TCL) organics (BNA fractions only), TCL Pesticide/PCB, and Target Analyte List (TAL) metals.

All surface soil, subsurface soil and sediment samples were collected using presterilized plastic scoops. All equipment had been sealed prior to sampling in order to eliminate cross-contamination of samples (Reference 2). Subsurface soil samples were collected at a depth of six (6) to eight (8) inches below

**TABLE 2**  
**PA/SI SAMPLE LOCATIONS AND RATIONALE**

<b>STATION NUMBER</b>	<b>PROPOSED SAMPLE LOCATION</b>	<b>RATIONALE</b>
SS01	southeast corner of BPS unit 2 site	to evaluate hazardous constituents in the soil exposure pathway
SS02	area on southern side of BPS unit 2	to evaluate hazardous constituents in the soil exposure pathway
SS03	area on western side of BPS unit 2	to evaluate hazardous constituents in the soil exposure pathway
SS04	area near picnic tables on BPS unit 2 site	to evaluate hazardous constituents in the soil exposure pathway
SS05	area on western side of BPS unit 2	to evaluate hazardous constituents in the soil exposure pathway
SS06	duplicate of SS05	to evaluate hazardous constituents in the soil exposure pathway
SS07	agricultural field approximately 200 yards northeast of BPS unit 2	to evaluate background constituents in the soil exposure pathway
SB01	southeast corner of BPS unit 2 site	to evaluate hazardous constituents in the soil exposure pathway
SB02	area on southern side of BPS unit 2	to evaluate hazardous constituents in the soil exposure pathway
SB03	agricultural field 100 yards southwest of BPS unit 2	to evaluate hazardous constituents in the soil exposure pathway
SB04	area on western side of BPS unit 2	to evaluate hazardous constituents in the soil exposure pathway
SB05	area near picnic tables on BPS unit 2 site	to evaluate hazardous constituents in the soil exposure pathway
SB06	agricultural field 100 yards west of BPS unit 2	to evaluate hazardous constituents in the soil exposure pathway
SB07	area on northwest side of BPS unit 2	to evaluate hazardous constituents in the soil exposure pathway
SB08	duplicate of SB07	to evaluate hazardous constituents in the soil exposure pathway
SB09	agricultural field approximately 200 yards northeast of BPS unit 2	to evaluate background constituents in the soil exposure pathway
SD01	drainage ditch immediately north of BPS unit 2	to evaluate hazardous constituents in the surface water migration pathway
SD02	drainage ditch approximately 200 yards downstream of SD01	to evaluate hazardous constituents in the surface water migration pathway
SD03	drainage ditch above confluence with BPS drainage ditch	to evaluate hazardous constituents in the surface water migration pathway
SD04	drainage ditch near pump station	to evaluate hazardous constituents in the surface water migration pathway
SD05	drainage ditch at PPE	to evaluate hazardous constituents in the surface water migration pathway
SD06	duplicate of SD05	to evaluate hazardous constituents in the surface water migration pathway
SD07	drainage ditch approximately 1/4 mile above PPE	to evaluate background constituents in the surface water migration pathway



ground surface.

During the collection of the samples, the ADEQ sampling team generated different types of Investigation Derived Wastes (IDW). The IDW included personal protective equipment (PPE) and disposable sampling equipment. All generated IDW were managed consistent with EPA guidance set forth in Management of Investigation-Derived Wastes During Site Inspections (EPA/540/G-91/9009) (Reference 2).

Samples were preserved consistent with EPA protocols established in A Compendium of Superfund Field Operations Methods (EPA/540/P-87/001). All samples collected for analysis were cooled to 4<sup>0</sup> Celsius by packaging the samples on ice (Reference 2).

All samples collected during the SI were packaged according to EPA Contract Laboratory Analytical Support Services (CLASS) protocols. All samples were shipped overnight to a preassigned laboratory (Reference 2).

Photographs taken during the SI are in Appendix A. Chemical Data Summaries are in Appendix B. Sample receipts are in Appendix C. Appendix D includes copies of the Organic Traffic Report, Inorganic Traffic Report, and Chain-of-Custody forms.

The Project Manager for the BPS site is Terry Sligh. The project manager is responsible for planning and coordinating all on site and off site activities, and for documenting and managing all samples

collected. Terry Sligh was assisted in collecting, documenting, and managing samples by Lynn Shaw (ADEQ Hazardous Waste Inspector Supervisor) and Vicky Prewett (ADEQ Hazardous Waste Inspector) (Reference 2).

## **4.2 Analytical Results**

Low concentration surface and subsurface soil samples were collected from areas on site. Low concentration sediment samples were collected on site and in the surface water drainage pathway offsite. These samples were used to characterize any sources of contamination, and to document any threat to human health and/or environment.

Chemical analysis of the samples were performed according to the EPA CLASS protocol, and the results were reviewed by ADEQ staff. ADEQ reviewed the data making comparisons to background samples concentrations and Sample Quantitation Limits (SQLs) to determine observed releases and observed contamination. Contaminant concentrations greater than three (3) times their respective background concentrations and above their respective SQLs are considered to meet observed contamination criteria in the soil exposure pathway or observed release criteria in the surface water migration pathway. The SQL calculations are included in appendix B.

### **4.2.1 Background Sample Analysis**

The background samples for the soil exposure pathway (SS07/SB09) were collected from an agricultural field approximately 200 yards northeast of the site. The background sample for the surface

water migration pathway was collected approximately 400 yards above the PPE (Table 2) (Figure 5, Figure 6) (Reference 2) (Appendix A; Appendix B).

#### 4.2.2 Pathway Sample Analysis

Analysis of the surface soil sample collected at Stations SS01, SS02, SS03, SS04, SS05, and SS06 revealed the presence of calcium and magnesium at concentrations meeting observed contamination criteria (Table 3) (Figure 5) (Appendix A; Appendix B).

**TABLE 3**  
**INORGANIC CONTAMINANTS DETECTED IN SURFACE SOIL SAMPLES**

LOCATION	SS01	SS02	SS03	SS04	SS05	SS06	SS07 Background
Calcium	20700 •	17700 •	6340 •	14300 •	7550 •	9230 •	886.8 av
Magnesium	8140 •	10100 •	4460 •	7530 •	3810 •	4590 •	1020 L

U - undetected

L - between CRDL and IDL

Jv - value biased low

av - adjusted value

• observed contamination

Analysis of the sediment sample collected at Station SD04 revealed the presence of arsenic, barium, cobalt, manganese, and vanadium at concentrations meeting observed contamination criteria (Table 4) (Figure 6) (Appendix A; Appendix B).

Analysis of the sediment sample collected at Station SD05 revealed the presence of arsenic, barium, cobalt, lead, manganese, and nickel at concentrations meeting observed contamination criteria (Table 4)

(Figure 6) (Appendix A; Appendix B).

Analysis of the sediment sample collected at Station SD06 revealed the presence of arsenic, cobalt, manganese, and vanadium at concentrations meeting observed contamination criteria (Table 4) (Figure 6) (Appendix A; Appendix B).

**TABLE 4**  
**INORGANIC CONTAMINANTS DETECTED IN SEDIMENT SAMPLES**

LOCATION	SD04	SD05	SD06	SD07 background
Arsenic	34.6 •	31.2 •	35.1 •	8.4
Barium	859 •	781 •	447	165
Cobalt	45.3 •	52.7 •	34.6 •	8.0 L
Lead	38.4	41.3 •	35.8	13.1
Manganese	6240 •	7050 •	4690 •	911
Nickel	51.8	69.7 •	37.6	18.5
Vanadium	73.2 •	57.2	64.3 •	21.1

U - undetected

L - between CRDL and IDL

Jv - value biased low

av - adjusted value

• observed contamination

Analysis of the sediment samples collected at Stations SD01 and SD02 revealed the presence of 4,4'-DDE at concentrations meeting observed contamination criteria (Table 5) (Figure 6) (Appendix A; Appendix B).

**TABLE 5**  
**PESTICIDE CONTAMINANTS DETECTED IN SEDIMENT SAMPLES**

LOCATION	SD01	SD02	SD07 bsckground
4,4' -DDE	40 •	18 •	4.1 U

U - undetected

L - between CRDL and IDL

Jv - value biased low

av - adjusted value

• observed contamination

## 5.0 SUMMARY

The Arkansas Department of Environmental Quality (ADEQ), Hazardous Waste Division, Inactive Sites Branch, conducted a PA/SI at the BPS site. The BPS site is an active site located at 794 Phillips Road 311, in West Helena, Phillips County, Arkansas. The site is bordered on all sides by agricultural land.

BPS is an active pesticide repackaging plant. The facility consists of BPS Unit 1 and BPS Unit 2. Large volume containers (supersacks and drums) containing various pesticides are received by the facility. BPS repackages these bulk containers into retail-size packages. Pesticides are not manufactured on site.

ADEQ conducted a SI sampling event at BPS, Inc. on September 12, 2000. Areas of possible

contamination were targeted for surface and subsurface soil sampling and sediment sampling. Seven (7) surface soil samples, nine (9) subsurface soil samples, and seven (7) sediment samples, including duplicates, were collected during the sampling event. All 23 samples were analyzed for (TCL) organics (BNA fractions only), TCL Pesticide/PCB, and Target Analyte List (TAL) metals.

Analysis of the surface soil samples collected document the presence of calcium and magnesium at levels meeting observed contamination criteria. Analysis of the subsurface soil samples collected on site document the presence of 4,4'-DDE at levels meeting observed release criteria. Sample collection locations were chosen to determine if on site contamination was present in the soil exposure pathway and met observed release criteria. Analysis of sediment samples collected in the surface water pathway document the presence of arsenic, barium, cobalt, lead, nickel, and vanadium at levels meeting observed release criteria.

Semivolatile organic compounds were not detected in surface soil, subsurface soil, or sediment samples and did not meet observed contamination or observed release criteria.

The pathways of concern at BPS, Inc. are the soil exposure and surface water pathways. The BPS site is active with workers present. The site is located within a mixed agricultural/commercial area. No schools or day-care are known to exist within 200 feet of the site.

The majority of contaminants detected were found in the surface water pathway at off site sample

locations. The contamination is not exclusively attributable to past site operations at BPS, Inc. since sample locations are in an area considered to be light industrial and agricultural.

Due to the inability to document all contaminants as being attributable to site operations, and a lack of substantial contamination, a pre-score package is not recommended. ADEQ recommends that no further action be taken concerning the BPS Site under CERCLA, and that the facility be considered for listing on the Archive CERCLIS list.

## REFERENCES

1. Arkansas Department of Environmental Quality, PA/SI Task Work Plan for BPS, Inc. (ARD983288572), West Helena, Phillips County, Arkansas, August 31, 2000.
2. Sligh, Terry L., Hazardous Waste Inspector, Arkansas Department of Environmental Quality, Field Logbook #1, 1999, pages 72-73.
3. Arkansas Geological Commission, "Geology of Arkansas", Information downloaded from internet site "<http://www.state.ar.us/agc/argeol.htm>".
4. United States Department of Agriculture, Soil Conservation Service, Soil Survey of Phillips County, Arkansas, 1974.
5. Arkansas Geological Commission, "Alluvial Aquifer of the Cache and St. Francis River Basins", Water Resources Circular No. 13, 1982.
6. Arkansas Department of Pollution Control and Ecology, Regulation 2, Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas, April 1998.
7. Osborne, Cindy, Arkansas Natural Heritage Commission, written correspondence with William Penn, Arkansas Department of Environmental Quality, RE: Elements of Special Concern within a 1, 4, and 15-mile radius of the BPS Site
8. Penn, William, Arkansas Department of Environmental Quality, Estimated population around BPS Site, extracted from 1990 Census of Population and Housing using Landview III Environmental Mapping Software.



# **REFERENCE 1**

Task work Plan

**PRELIMINARY ASSESSMENT/SITE INSPECTION  
FOR**

**BPS, Inc.  
WEST HELENA, ARKANSAS**

**ARD983288572**

**Phillip Ofosu  
EPA Site Assessment Manager**

**Date**

*Mike Bates*  
**Mike Bates  
Division Chief**

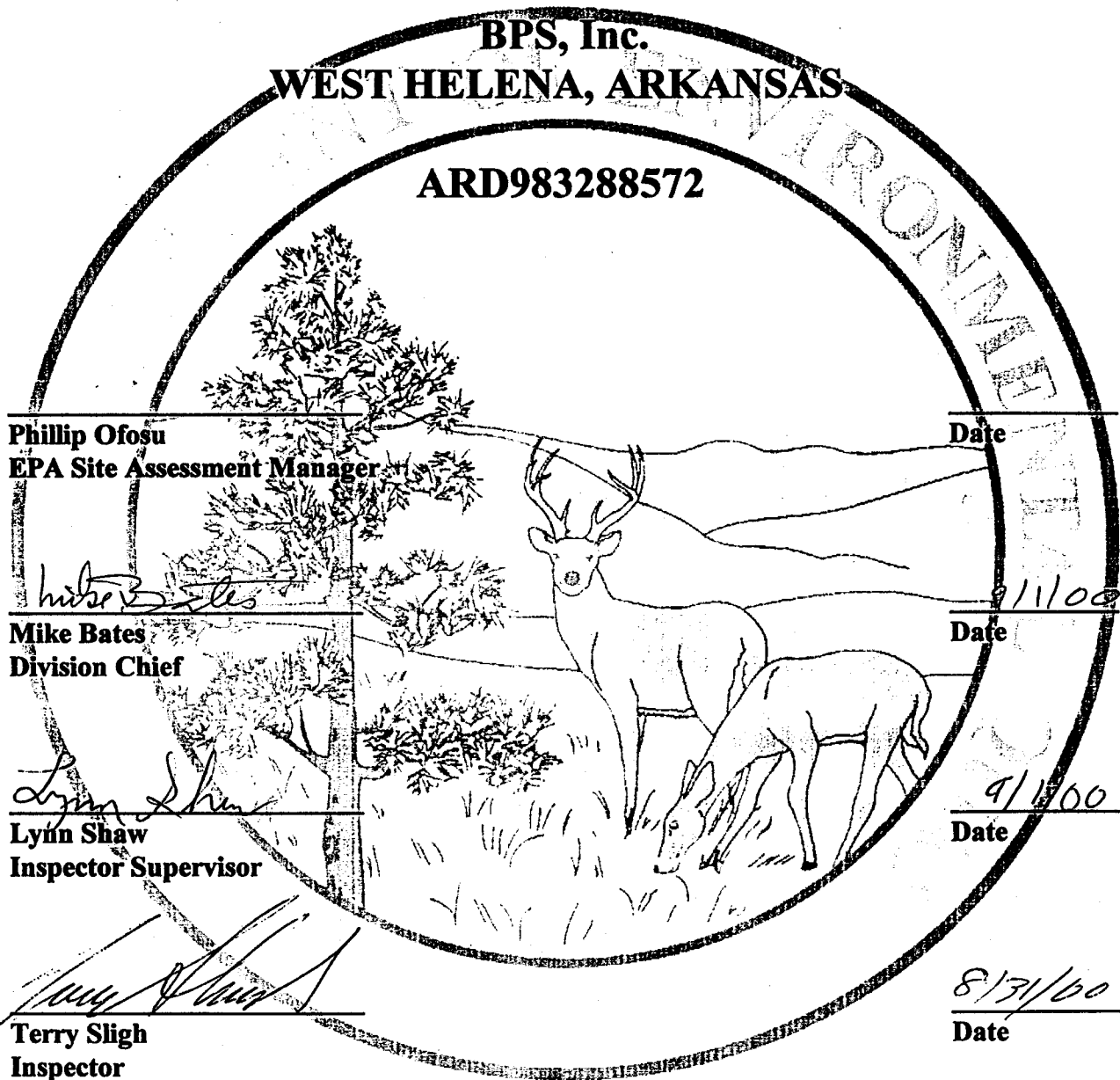
**Date**

*Lynn Shaw*  
**Lynn Shaw  
Inspector Supervisor**

**Date**

*Terry Sligh*  
**Terry Sligh  
Inspector  
State Project Manager**

**Date**



## **REFERENCE 2**

1/12/00 Left L.R. at approx 6:00 a.m. to travel to BPS  
 for sample collection. Lynn Shaw & Vicki Prewett  
 are along for sampling. Arrived at BPS at  
 approx 8:25. Signed in at office. Sky is  
 cloudy, rain, temp approx 80°F. PPE Level  
 R. Barbara McDaniel will be along with us  
 from BPS. She is collecting splits with us.  
 Sample collection times will correspond with  
 photograph times. Lynn & Vicki will be  
 collecting the samples. I will record.  
 Went to lunch at 12:00 returned to site  
 at 1:00 p.m., completed sampling at 14:53 p.m.  
 Left BPS site at 3:30 p.m. to Return to L.R.  
 Samples bagged & tagged as they were taken and  
 put in ice chest with ice. Samples shipped to  
 labs via Fed Ex. Samples dropped off at  
 Fed Ex at approx 6:00 p.m. in Little Rock.  
 2 ice chests shipped. 1 chest with inorganics  
 1 chest with organics. End of Record →

Photo	Time
1	8
2	9
3	9:1
4	9:1
5	9
6	9
7	9:1
8	10:1
9	10:1
10	10
11	10
12	10
13	11
14	11
15	11
16	13
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18	13
19	14
20	14



## **REFERENCE 3**

# Arkansas Geological Commission

<a href="#">Homepage</a>	<a href="#">Location</a>	<a href="#">Services</a>	<a href="#">Maps</a>	<a href="#">Publications</a>
<a href="#">Personnel</a>	<a href="#">Arkansas Geology</a>	<a href="#">Resources</a>	<a href="#">Mineral Producers</a>	<a href="#">Links</a>

## Geology of Arkansas

Rocks are generally placed into 1 of 3 major categories: igneous, metamorphic, or sedimentary. Igneous rocks have solidified from molten or partly molten mineral matter. Metamorphic rocks have been altered in the solid state from some pre-existing condition in response to significant changes in temperature, pressure, or chemical environment. Sedimentary rocks are composed of particles of sediment, which are derived by the weathering and/or the erosion of pre-existing rock. Most surficial rocks in Arkansas are sedimentary, but there are some igneous rocks (with adjacent contact metamorphic rocks) and very low grade regional metamorphic rocks in Arkansas also.

A sedimentary rock consists of two components: the particles and the cement that holds them together. However, the unconsolidated sediments of eastern Arkansas are considered sedimentary rocks. Sedimentary rocks are classified as clastic (rocks made up of grains of sand, silt, and clay) or chemical (rocks made up of shell fragments, saline water deposits, and other materials that are deposited from solution). The most common clastic sedimentary rocks are shales, siltstones, and sandstones. The most common chemical sedimentary rocks are limestone and dolostone.

To understand how sedimentary rocks form, we must account for the processes that create the original particles of sediment, the mechanisms of sediment transport, the processes of deposition or precipitation of a given sediment, and what has happened to the sediment over time. By studying rocks and depositional systems (the processes by which sediments are deposited), geologists recognize that most of the sedimentary rocks in the Paleozoic Highlands of Arkansas are marine. In the southern and eastern parts of the state, the sedimentary deposits are predominantly fluvial (fresh-water processes).

The exposures of igneous rocks in Arkansas are less than 0.1 percent of the entire area of the state. Most are exposed over 15 square miles, principally in Pulaski, Saline, Hot Spring, Garland, and Pike Counties. A few small igneous dikes and sills are present outside the Ouachita region, mostly in the Arkansas Valley, and in at least one case, in the Boston Mountains. Except for some localized contact metamorphism adjacent to the larger igneous intrusions, only very low grade metamorphic rocks are present in the state.

Arkansas is divided into a highland area in the northwest and a lowland region in the south and east. The rocks in the highland area are dominated by well-lithified sandstones, shales, limestones, and dolostones of Paleozoic age. A thin drape of younger unconsolidated clays, sands, and gravel, termed alluvium, is often found in valley floors and associated with the streams and rivers. The sedimentary deposits of the lowlands are mainly unconsolidated clay, sand, and gravel of Quaternary age, poorly consolidated deposits of clay, sand, silt, limestone, and lignite of Tertiary age, and consolidated (to a limited extent) deposits of Cretaceous marl, chalk, limestone, sand, and gravel.

When most of the sediments that compose the rocks in the highland region of Arkansas were being deposited, north Arkansas was a shallow south-sloping sea floor (continental shelf), the Arkansas River Valley was near the edge of the shelf, and the Ouachita area was a deep abyssal plain (see [General Geologic History](#)). An abyssal plain is the relatively smooth and deep (more than 3,000 feet below sea level) parts of the ocean floor where accumulating sediments have buried the pre-existing topography. In the late Paleozoic Era, a broad uplift domed the Ozark strata with little structural disruption. Simultaneously, a collision of two of the earth's mobile continental plates compressed the sediments of the abyssal plain into the Ouachita Mountains. This multimillion-year-long process folded and faulted the Ouachita strata into a structurally complex mountain chain. The Arkansas River Valley area is the transition zone between the structurally simple Ozarks and the structurally complex Ouachitas with subdued characteristics in each region.

Today, the rocks of the Ozarks tilt slightly to the south and have a dendritic drainage pattern. Since shales and

siltstones erode faster than sandstones and limestones, the basic topography is flat-topped mountains with stepped flanks. By contrast, the topographic expression of the Ouachitas is controlled not only by the erosional resistance of the rocks, but also by their internal structure. The strata are complexly folded and frequently faulted. The mountains are mostly east-west-trending ridges supported by erosionally resistant rocks and separated by less resistant rocks. The Arkansas River Valley is characterized by much less intensely folded and faulted strata than the Ouachita region. Erosional processes left the synclines as mountains and the anticlines as valleys.

The rocks and sediments of the Mississippi River Alluvial Plain and West Gulf Coastal Plain (both in the south and east portion of the state) are much younger than those of the Interior Highlands. The Cretaceous-age rocks of southwest Arkansas were deposited in and along the margin of a shallow sea. The Tertiary-age materials of southern Arkansas represent marginal marine conditions, both on- and off-shore deposits. The unconsolidated Quaternary sediments of eastern Arkansas were deposited by water released during the interglacial phases of the Ice Age. Crowley's Ridge is an isolated erosional remnant carved by rivers, possibly with structural control from ancient seismic activity. Significant deposits of wind-blown dust (loess) were also deposited across Arkansas during the Quaternary.

Arkansas' rocks, minerals, fossils, fossil fuels, and its water resources resulted from prolonged episodes of deposition, mountain building, and erosion. The interaction of these and other processes was variable throughout Arkansas. Long-term changes in climate were also significant.

Modified from AGC Bulletin 24: Mineral, Fossil-Fuel, and Water Resources of Arkansas, 1997



# Arkansas Geological Commission

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## Stratigraphic summary of the Mississippi Embayment and Gulf Coastal Plain

Eastern and southern Arkansas are underlain by Cretaceous age through Recent sedimentary deposits with small areas of igneous intrusions of Cretaceous age. Cretaceous sedimentary deposits are exposed in southwestern Arkansas and represent shallow, marginal, and often restricted marine environments. Southern Arkansas is dominated by Tertiary marginal marine and coastal plain continental deposits with a veneer of Quaternary terrace and alluvial deposits. Eastern and northeastern Arkansas is dominated by Quaternary terrace and alluvial deposits with minor exposures of Tertiary units. At least three terrace levels are recognized in the region. The Mississippi Embayment manifests a north-south linear erosional remnant Crowley's Ridge, which is generally capped by Quaternary loess and preserves minor exposures of Tertiary deposits along its margins. Topographically, the entire area ranges from low hills to essentially flat terrain.

## TRINITY GROUP/FORMATION

**Age:** Early Cretaceous Period, Comanchian Series

**Distribution:** Gulf Coastal Plain in southwest Arkansas. Parts of Little River, Sevier, Howard, Hempstead, Pike, Clark, and Nevada counties; Texas, Louisiana, Oklahoma

**Geology:** The Trinity Group is comprised of sand, gravel, clay, limestone, and evaporite deposits. Gypsum is mined commercially from this unit. Prominent members of the Trinity Group include the Pike Gravel Member, the Dierks Limestone Member, and the DeQueen Limestone Member. The Pike Gravel, the basal member of the Trinity Group, is a bedded, 0- to 100-foot thick, pale-yellow to medium-orange, predominantly gravel-bearing deposit. The Dierks Limestone Member is a 0- to 70-foot thick, interbedded, greenish, calcareous clay and gray, fossiliferous limestone present in the lower part of the Trinity. The DeQueen Limestone Member, which varies from 0 to 100 feet in thickness, is present in the middle part of the Trinity Group sequence and is composed of interbedded green and gray calcareous clay, limestone, gypsum and celestite. The limestones are thin-bedded and sandy, but crystalline and fossiliferous intervals are present. The DeQueen Limestone Member is also noted for a dinosaur track-way site discovered in a mine near Nashville in Howard County. The upper part of the Trinity Group is mostly fine-grained, cross-bedded sand, usually weathered reddish. Marginal marine fossils are noted from the Trinity Group and carbonized logs are found between the Dierks and DeQueen Limestone Members. The base of the Trinity Group rests unconformably on a surface of upturned and eroded Paleozoic rocks. The Trinity Group ranges up to 1,000 feet in thickness, although it is usually much thinner.

**Original Reference:** R. T. Hill, 1888, Science, v. 11, p. 21

**Type locality:** Named for exposures on the Trinity River of Texas

## GOODLAND LIMESTONE/FORMATION

**Age:** Early Cretaceous Period, Comanchian Series

**Distribution:** Limited exposure along Little River north of Cerro Gordo, Little River County, Arkansas, Gulf Coastal Plain; Oklahoma and Texas

**Geology:** The Goodland Limestone is a medium- to thick-bedded, hard, sandy, light-

gray limestone with minor thin-bedded calcareous sandstone. Poorly preserved fossils are common. The lower contact is not exposed in Arkansas. The maximum exposed thickness of the Goodland Limestone is 35 feet; however, the entire unit may reach 50 feet.

**Original reference:** R. T. Hill, 1891, Geological Society American Bulletin, v. 2, p. 504- 514.

**Type locality:** Named for Goodland, Choctaw County, Oklahoma. (Old Goodland is present site of Good Switch on railroad, 3 miles south of Hugo, Oklahoma)

## KIAMICHI FORMATION

**Age:** Early Cretaceous Period, Comanchian Series

**Distribution:** Very limited exposure in Little River County, Arkansas Gulf Coastal Plain; Oklahoma, Texas

**Geology:** The Kiamichi Formation is composed of closely packed oyster shells in a matrix of dense, hard, gray-green marl interbedded with softer gray and green marls. Discontinuous beds and lenses of fossiliferous limestone are found in some outcrops. Almost all fossils associated with this unit are assigned to *Gryphaea navia*. The conformability of the lower contact has not been reported in Arkansas. A maximum of 20 feet of the Kiamichi Formation is reported.

**Original reference:** R. T. Hill, 1891, Geological Society of America Bulletin, v. 2, p. 504-515.

**Type locality:** Named for historic plains of Kiamichi River near Fort Towson, Choctaw County, Oklahoma

## WOODBINE FORMATION

**Age:** Late Cretaceous Period, Gulfian Series

**Distribution:** Gulf Coastal Plain in southwest Arkansas, parts of Pike, Howard, and Sevier Counties; Texas, Oklahoma, Louisiana

**Geology:** The Woodbine Formation is composed of bedded gravel, sand, bedded clay, and water-laid volcanic tuff and ash. The basal part of this unit is composed of gravel-bearing beds of variable thickness, which may be cemented by iron oxides to form a conglomerate. The overlying water-laid volcanic tuffs are sandy and cross-bedded. These sediments are blue-green when fresh, weathering to deep-red waxy clay-bearing units. Rare leaf fossils are noted from some clays of the Woodbine Formation. The formation was deposited upon an unconformable surface separating the Early and Late Cretaceous. The Woodbine Formation varies from 0 to 350 feet in thickness.

**Original reference:** R. T. Hill, 1901, U. S. Geological Survey 21st Annual Report, pt. 7, p. 293.

**Type locality:** Named for exposures at Woodbine, Cooke County, Texas

## TOKIO FORMATION

**Age:** Late Cretaceous, Gulfian Series

**Distribution:** Gulf Coastal Plain in southwest Arkansas in parts of Clark, Pike, Hempstead, Howard, Sevier and Little River Counties; Oklahoma

**Geology:** The Tokio Formation is composed of a basal gravel overlain by coarse sand that is interbedded with light- to dark-colored clays. Some beds of calcareous or ferruginous sandstone are present. The basal unit of bedded gravel is variable in thickness, ranging from 1 to 25 feet. This gravel may be cemented by iron oxides in places to form a conglomerate. The sands are brown to gray and generally cross-bedded. The dark-gray clay is pyritic and contains plant imprints. Kaolin beds are found in the Tokio Formation in Pike County. Fossils from the Tokio Formation

include bivalves, gastropods, plant material, and a few vertebrate remains. The lower contact of the formation is unconformable, resting on the Woodbine Formation in Little River County and successively older units eastward. In Howard County, the thickness of the formation is 300 feet and the formation thins to the east.

Original reference: H. D. Miser and A. H. Purdue, 1918, U. S. Geological Survey Bulletin 690, p. 19-24.

Type locality: Named for exposure in the vicinity of Tokio, Hempstead County, Arkansas

## BROWNSTOWN MARL/FORMATION

Age: Late Cretaceous Period, Gulfian Series

Distribution: Gulf Coastal Plain in southwest Arkansas in parts of Clark, Pike, Hempstead, Howard, Sevier and Little River Counties; Texas, Oklahoma, (Louisiana?)

Geology: The Brownstown Marl is composed of clay marls, thin (sometimes sandy) limestones, sandy marls, and some fine-grained sands. Glauconite and some phosphatic material may be associated with the various lithologies. Color is quite variable, depending on the degree of weathering, iron content, and other factors, yielding tan, brown, blue, green, red, yellow, gray, or any color combination and hue. Near the base of the unit, beds of thin hard limestone exist that contain poorly preserved fossils. The marls in the formation are often highly fossiliferous. The most common fossils are oysters and other bivalves, some cephalopods, and occasional echinoderms, fish material, and annelids. The Brownstown Marl rests unconformably on underlying formations. The formation is about 250 feet thick in Howard County, but thins both to the east and west.

Original reference: R. T. Hill, 1888, Arkansas Geological Survey Annual Report 1888, v. 2, p. 72, 86-87, 188; 1894, Geological Society of America Bulletin, v. 5, p. 302.

Type locality: Named after Brownstown, Sevier County, Arkansas

## OZAN FORMATION

Age: Late Cretaceous Period, Gulfian Series

Distribution: Gulf Coastal Plain, parts of Clark, Pike, Hempstead, Howard, Sevier and Little River Counties; Oklahoma

Geology: The Ozan Formation consists of tan, sandy, micaceous marl with a basal lentil of sandy marl and marly sand. The basal lentil, known as the Buckrange Sand, is highly glauconitic and contains shark teeth and phosphatic nodules. Another glauconitic interval is sometimes present about 55 feet above the base of the Ozan. Near the top of the formation, the marls become more chalky. An occasional bed of hard limestone occurs in some outcrops near the top of the unit. Some of the Ozan Formation marls are highly fossiliferous, commonly containing bivalves (mostly oysters), cephalopods, gastropods, echinoderms, corals, crustaceans, fish material, and annelids. The Ozan Formation lies unconformably upon the Brownstown Marl. The Ozan Formation ranges from 150 to 250 feet in thickness.

Original reference: C. H. Dane, 1926, U. S. Geological Survey Press Bulletin 8823, September 10, 1926.

Type locality: Named for exposures along the middle fork of Ozan Creek and for the town of Ozan, Hempstead County, Arkansas

## ANNOA CHALK/FORMATION

Age: Late Cretaceous Period, Gulfian Series

**Distribution:** Gulf Coastal Plain in southwest Arkansas in parts of Hempstead, Howard, and Little River Counties; Texas, Louisiana, Oklahoma

**Geology:** The Annona Chalk is a hard, thick-bedded to massive, slightly fossiliferous chalk. It weathers white, but is blue-gray when freshly exposed. The unit is commercially mined for cement. Fossils in the Annona Chalk include coelenterates, echinoderms, annelids, bivalves, gastropods, cephalopods, and some vertebrate traces. The Annona rests conformably upon the Ozan Formation. The formation varies from 0 to 100 feet in thickness.

**Original reference:** R. T. Hill, 1894, Geological Society of America Bulletin, v. 5, p. 308.

**Type locality:** Named for outcrops about 2 miles northwest of Annona, Red River County, Texas

## MARLBROOK MARL/FORMATION

**Age:** Late Cretaceous Period, Gulfian Series

**Distribution:** Gulf Coastal Plain in southwest Arkansas in parts of Clark, Hempstead, Howard, and Little River Counties; Texas, Louisiana

**Geology:** The Marlbrook Marl is a uniform, chalky marl that is blue-gray when freshly exposed, and white to light-brown when weathered. This unit is moderately fossiliferous in its upper part, in contrast to the lower part where fossils are few. Common fossils include *Exogyra*, *Gryphaea*, and *Ostrea* oyster species and reptile remains. The lower contact of the formation is thought to be conformable with the Annona Chalk. The Marlbrook Marl varies from 50 to 220 feet in thickness.

**Original reference:** R. T. Hill, 1888, Arkansas Geological Survey Annual Report 1888, v. 2, p. 72, 84-86, 188.

**Type locality:** Typically exposed about 1 mile north of Saratoga, on road to Mineral Springs, Howard County, Arkansas; also exposed along Marlbrook Creek in T10S, R24W, Hempstead County, Arkansas

## SARATOGA CHALK/FORMATION

**Age:** Late Cretaceous Period, Gulfian Series

**Distribution:** Gulf Coastal Plain in southwest Arkansas in parts of Clark, Hempstead, and Howard Counties; Louisiana, Texas

**Geology:** The Saratoga Chalk consists of fossiliferous, hard, sandy, somewhat glauconitic chalk with some beds of marly chalk and chalky sand. It weathers white, light gray and light brown, and is blue-gray when freshly exposed. The common fossils found in the unit include sponges, bryozoa, echinodermata, annelids, bivalves, gastropods, cephalopods, crustaceans, and fish teeth. The formation displays an unconformity at its base, which represents a distinct faunal and lithologic break. The Saratoga Chalk ranges from 20 to 70 feet in thickness.

**Original reference:** J. C. Branner, 1898, American Institute of Mining Engineers Transactions, v. 27, p. 52-59.

**Type locality:** Named for exposures north and east of Saratoga in Hempstead and Howard Counties, Arkansas

## NACATOCH SAND/FORMATION

**Age:** Late Cretaceous Period, Gulfian Series

**Distribution:** Gulf Coastal Plain in southwest Arkansas in parts of Clark, Nevada, and Hempstead Counties; Louisiana, Texas

**Geology:** The Nacatoch Sand is composed of cross-bedded, yellowish and gray fine quartz sand; hard, fossiliferous sandy limestone; coarse, highly glauconitic sand; fine-

grained, argillaceous blue-black sand; bedded light-gray clay and marl. The sands in the Nacatoch are generally unconsolidated. At the base of the unit hard, fossiliferous limestones and marl are present. Near the middle of the unit, a coarse, highly glauconitic lens exists. On outcrop, this lens appears almost black in places and may be up to 60 feet in thickness, but averages closer to 30 feet. Thin-bedded gray clay is present interbedded with fine sands close to the top of the unit. Fossils in the Nacatoch Sand include corals, echinoderms, bryozoa, annelids, bivalves, gastropods, cephalopods, crab remains, and some shark teeth. The Nacatoch Sand has an unconformity at its base. The formation varies in thickness from 150 to 400 feet. **Original reference:** A. C. Veatch, 1905, Louisiana Geological Survey Bulletin 1, p. 84-88; and 1905, U. S. Geological Survey Water-Supply Paper 114, p. 180-183. **Type locality:** Exposed at Nacatoch Bluff on the Little Missouri River, Clark County, Arkansas

## ARKADELPHIA MARL/FORMATION

**Age:** Late Cretaceous Period, Gulfian Series

**Distribution:** Gulf Coastal Plain in southwest Arkansas in parts of Clark, Nevada, and Hempstead Counties; Louisiana, Texas

**Geology:** The Arkadelphia Marl is mostly a dark-gray to black marl or marly clay with some limy, gray sandstone, gray sandy clay, sandy limestone, concretionary limestone, and white to light-brown impure chalk. The sandy marls and limestones are at or near the base of the unit, while the impure chalks are present in the upper part of the formation. (The strata that Hill first applied the name "Arkadelphia" to are no longer considered a part of this unit.) The fossil fauna includes corals, bivalves, gastropods, cephalopods, shark teeth, and various microfossils. The Arkadelphia Marl rests unconformably on the Nacatoch Sand. The formation is 120 to 160 feet in thickness.

**Original reference:** R. T. Hill, 1888, Arkansas Geological Survey Annual Report 1888, v. 2, p. 53-56, 188.

**Type locality:** Typical exposures of the Arkadelphia (in its modern sense) are present 5 to 7 miles north and northwest of Hope, between U. S. Interstate 30 and Prescott along Arkansas Highway 19, and in the Oakhaven area

## MIDWAY GROUP

**Age:** Tertiary Period, Paleocene Epoch

**Distribution:** Central to southwestern Arkansas, in a band of exposure from Cabot to Texarkana; Texas to Georgia, Illinois, Kentucky, Missouri, and Tennessee

**Geology:** The Midway Group sequence exposed in Arkansas represents a marginal marine depositional environment. The lithologies include calcareous shale, arenaceous limestone, calcareous glauconitic sandstone, conglomerate, and light to very dark bluish-gray clay shale. The Midway Group interval is not normally divided into formations in Arkansas; however, various workers have indicated that it is possible to divide the unit into two formations: the lower Clayton Formation and the upper Porters Creek Formation. The Clayton Formation contains most of the calcareous and sandy lithologies, whereas the Porters Creek Formation is chiefly composed of shales and silty shales. The fossils of the Midway Group include a rich fauna of bivalves, gastropods, foraminifera, and ostracods with bryozoa, brachiopods, echinoids, crabs, fish, and crocodile teeth fossils also present. The lower boundary of the Midway Group is unconformable. The thickness ranges from a feather-edge to 130 feet on the outcrop; in the subsurface, the unit is usually much thicker.

**Original reference:** G. D. Harris, 1894, American Journal of Science, 3d, v. 47, p. 303-304; and, 1896, American Paleontology Bulletin, v. 1, n. 4, p. 10-38.

**Type locality:** Named for exposures at Midway Landing and plantation on west side of the Alabama River (about 5 miles below Prairie Bluff) in Wilcox County, Alabama

## WILCOX GROUP

**Age:** Tertiary Period, Eocene Epoch

**Distribution:** Central to southwestern Arkansas, in a wide band of exposure from Cabot to Texarkana, along the west side of Crowley's Ridge north of Jonesboro; Texas to Georgia, Illinois, Kentucky, Missouri, and Tennessee

**Geology:** The Wilcox Group is a thick series of non-marine sands, silty sands, clays, and gravels with some thick deposits of lignite. In central Arkansas, bauxite is found at the base of the Wilcox near Cretaceous syenite knobs that were positive topographic features during Wilcox time. The sands are generally fine- to very fine-grained and light-gray when fresh. The clays are light-gray or brown and often sandy or silty. Frequently, either lithology will be dark brown to black when enough carbonaceous material is included. The lignites occur throughout the sequence, controlled by depositional environment rather than stratigraphic position. Some workers divide the Wilcox Group of Arkansas into three formations: the Berger, the Saline, and the Detonti Formations. Plant remains and trace fossils, associated with the lignites and lignitic clays, are the most common fossils present. The lower contact of the Wilcox is unconformable with the Midway Group and unconformities occur within the sequence. The thickness of the Wilcox Group ranges from a feather edge to as much as 1,025 feet with 850 feet often reported as average.

**Original reference:** A. F. Crider and L. C. Johnson, 1906, U. S. Geological Survey Water-Supply Paper 159, p. 5, 9; A. F. Crider, 1906, U. S. Geological Survey Bulletin 283.

**Type locality:** Named for extensive exposures in Wilcox County, Alabama

## CLAIBORNE GROUP

**Age:** Tertiary Period, Eocene Epoch

**Distribution:** West Gulf Coastal Plain of southern Arkansas and Crowley's Ridge in eastern Arkansas; Gulf Coastal Plain from Georgia to southern Texas

**Geology:** The Claiborne is chiefly non-marine in origin, but does contain some marine intervals. The unit is composed of medium- to very fine-grained sands, silts, and silty clays. The sands tend to be light- to dark-gray, white, brown, or red, depending on the degree of weathering. The silts and clays are light- to dark-gray and sometimes variegated. Intervals enriched in carbonaceous material are dark-brown to black. The silts are usually clayey and the clays are normally silty or sandy. Lignite beds are present in this interval. Lignite deposition was controlled by the geologic environment. In the subsurface, the Claiborne Group has been divided into the Carrizo Sand, Cane River Formation, Sparta Sand, Cook Mountain Formation, and Cockfield Formation. Fossils include fish and reptile bones and teeth, leaf impressions, lignitic wood, and trace fossils. The lower contact of the Claiborne Group is poorly known, but considered unconformable to the Wilcox Group. The thickness of the Claiborne ranges from a thin edge to 1,500 feet.

**Original reference:** T. A. Conrad, 1847, Philadelphia Academy of Natural Science Proceedings, v. 3, p. 280-282

**Type locality:** Named for exposures at Claiborne Bluff and Claiborne Landing on the Alabama River in Monroe County, Alabama

## JACKSON GROUP

**Age:** Tertiary Period, Eocene Epoch (upper)

**Distribution:** Southeast Arkansas and southern Crowley's Ridge in eastern Arkansas; Gulf Coastal Plain from Georgia to southern Texas

**Geology:** The Jackson Group is divided into two distinct units in Arkansas: a lower marine unit called the White Bluff Formation and an overlying non-marine unit called the Redfield Formation. The blue-gray to off-white White Bluff Formation has three dominate facies: an argillaceous sand containing glauconite and rich in molluscan fossils, a calcareous glauconitic clay with common invertebrate fossils, and a blocky clay with some silt and a trace of sand and invertebrate (mostly molluscan) molds. The Redfield Formation is typically a sequence of light-gray, thinly laminated silts, silty clays, and silty sands. Crossbedded sands and minor lignite beds are present in the Redfield Formation with plant remains being locally abundant. A minor disconformity occurs at the base of the Jackson Group sequence. The thickness of the Jackson Group may be 300 feet, but no outcrop areas exhibit the entire Arkansas section.

**Original reference:** T. A. Conrad, 1856, Philadelphia Academy of Natural Science Proceedings, v. 7, p. 257-258; E. W. Hilgard, 1860, Rept. Geology and Agriculture Mississippi, p. 128-135.

**Type locality:** Named for exposures at Jackson, Mississippi, along the Pearl River and Moodys Branch

## **SAND AND GRAVEL**

**Age:** Quaternary Period, Pleistocene Epoch (Late Tertiary, Pliocene Epoch?)

**Distribution:** Crowley's Ridge in eastern Arkansas

**Geology:** Sands and gravels are present on Crowley's Ridge underlying loess deposits. This interval has not been assigned to a specific stratigraphic unit or studied in detail.

## **LOESS**

**Age:** Quaternary Period, Pleistocene Epoch

**Distribution:** Crowley's Ridge in eastern Arkansas

**Geology:** Although loess undoubtedly occurs in other places, only on the middle and southern portions of Crowley's Ridge is it specifically mapped. It consists of tan, brown, reddish-brown calcareous silt in thin to massive beds. Many workers recognize three separate loess units: an upper thick loess, a middle thin loess, and a lower thick loess. Loess will often hold a high vertical slope. Calcareous concretions are regularly found in the unit. Fossils of pulmonate gastropods are fairly common with fresh water mollusks and proboscidean bones less common. The lower contact of the loess is unconformable with underlying units. The thickness increases from north to south ranging to 140 feet, although 40 to 60 feet is more common at the southern end of Crowley's Ridge.

## **SILT AND SAND**

**Age:** Quaternary Period, Pleistocene Epoch

**Distribution:** Crowley's Ridge in eastern Arkansas

**Geology:** The northern portion of Crowley's Ridge is capped by an interval of unconsolidated silt and sand with lenses of clay and gravel. This unit has never been studied in Arkansas.

## **DUNE SAND**

**Age:** Quaternary Period, Pleistocene Epoch

**Distribution:** Mississippi River Embayment in eastern Arkansas

**Geology:** The sand dunes generally consist of homogeneous, massive, well-sorted, tan

or buff to grayish- or reddish-brown, fine sands. Cross-stratification and bedding features are lacking in the interval, apparently due to extensive weathering and biogenic reworking. These sands are thought to be derived from glacial outwash originally deposited along major drainages during the initial stages of interglacial times. The dunes are best developed on the east sides of the White, Current, and Black Rivers. The dune sand fines with distance from these rivers. Dunes are present on all terrace levels, but not on present-day alluvium. No significant fossils have been discovered associated with these sands. The lower contact seems to be unconformable in most places.

## **TERRACE DEPOSITS**

**Age:** Quaternary Period, Pleistocene Epoch

**Distribution:** Eastern and southern Arkansas, Mississippi River Embayment, West Gulf Coastal Plain

**Geology:** The terrace deposits include a complex sequence of unconsolidated gravels, sandy gravels, sands, silty sands, silts, clayey silts, and clays. The individual deposits are often lenticular and discontinuous. At least three terrace levels are recognized with the lowest being the youngest. Fossils are rare. The lower contact is unconformable and the thickness is variable.

## **ALLUVIUM**

**Age:** Quaternary Period, Holocene Epoch

**Distribution:** State wide

**Geology:** The deposits consist of alluvial sediments of present streams and include gravels, sands, silts, clays, and mixtures of any and all of these. The partition of this unit from other Holocene alluvial deposits was based more on geomorphic considerations than on lithology or age. Fossils are rare and modern. The lower contact is unconformable and the thickness is variable.

## **ALLUVIUM (STREAM OVERBANK)**

**Age:** Quaternary Period, Holocene Epoch

**Distribution:** Eastern Arkansas, Mississippi River Embayment

**Geology:** The deposits indicated by this notation are alluvial deposits of small streams, the overbank deposits of major streams, or older meander belt deposits of major streams. The partition of this unit from other Holocene alluvial deposits was based more on geomorphic considerations than lithology or age. Fossils are rare. The lower contact is unconformable and the thickness is variable.

## **ALLUVIUM (CHANNEL MEANDER)**

**Age:** Quaternary Period, Holocene Epoch

**Distribution:** Eastern Arkansas, Mississippi River Embayment

**Geology:** This unit represents the more recent channel meanders and current flood plain deposits of significant streams. Channel meander scars are distinct in this unit. The partition of this unit from other Holocene alluvial deposits was based more on geomorphic considerations than lithology or age. Fossils are rare. The lower contact is unconformable and the thickness is variable.

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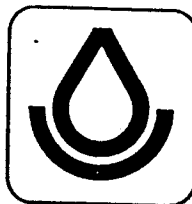
## **REFERENCE 4**

# SOIL SURVEY

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## **Phillips County Arkansas**

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UNITED STATES DEPARTMENT OF AGRICULTURE  
Soil Conservation Service  
and Forest Service  
In cooperation with  
ARKANSAS AGRICULTURAL EXPERIMENT STATION  
Issued November 1974

# SOIL SURVEY OF PHILLIPS COUNTY, ARKANSAS

BY JERRY L. HOGAN AND JAMES L. GRAY, SOIL CONSERVATION SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE AND FOREST SERVICE, IN COOPERATION WITH THE ARKANSAS AGRICULTURAL EXPERIMENT STATION

**P**HILLIPS COUNTY is in the east-central part of Arkansas (fig. 1). It is roughly triangular in shape and has an area of about 465,920 acres, or 728 square miles. It is about 27 miles wide at the northern boundary and about 10 miles wide at the southern boundary. The maximum length is about 37 miles. The northwestern corner is formed by the intersection of the fifth principal meridian and a base line. It was from this point of intersection that the Louisiana Purchase was surveyed.

The county is bounded on the east by channels of the Mississippi River, some of which are now abandoned. To the south is Desha County, to the west are the White River and Monroe County, and to the north is Lee County.

In 1970 the population of the county was 40,046. Helena, the county seat, had a population of 10,415, and West Helena had a population of 11,007. Marvell, with a population of 1,980, and Elaine, with a population of 1,210, are two other important trading centers in the county.

The economy of the county is based on farming. Except for a few manufacturing plants in and near Helena and West Helena, most of the businesses provide farm services.

## *General Nature of the County*

This section discusses the farming, physiography and drainage, and climate in Phillips County.

Most of the soils in the county contain moderate to high amounts of plant nutrients and are among the most fertile in the State.

Uplands, where the soils formed in thick layers of windblown sediment, make up about 42 percent of the county. The uplands lie across the northern part of the county. They include the southern end of Crowley Ridge, which is the site of the cities of Helena and West Helena. The part of the St. Francis National Forest in the county also is mainly on Crowley Ridge.

Except for the steep slopes on the Ridge, most of the upland soils are suitable for cultivation or improved pasture. Excess water is a moderate to very severe limitation in the level areas, as is erosion in the more sloping areas.

About 58 percent of the county is bottom land and associated lakes and rivers. This area lies mainly south of a line that runs from Helena on the east, through Trenton, to Connells Point on the west. The soils in this area are suited to farming. Except for a few large wooded tracts, such as that within the White River National Wildlife Refuge along the southwestern side of the county and a few river islands and cutoff points, nearly all the area is cultivated. Excess water, which drains away slowly or is ponded, is a moderate to very severe limitation throughout the area. Erosion is insignificant except in a few places.

The bottom-land area is part of the combined flood plains of the White, Mississippi, and St. Francis Rivers. It was subject to frequent flooding by these rivers until levees were constructed. The last widespread flood occurred in 1937. Since then the White River levee was constructed, and major flooding has been negligible except in the areas between the rivers and their levees and along Big Creek and its tributaries. Even in the areas that are subject to such flooding, which include about 15 percent of the land area, the floods are mainly between January and June. In most years the flooded soils dry early enough that warm-season crops can be grown.

Elevation above mean sea level in the county ranges from about 380 feet atop Crowley Ridge near the county line on the north to about 140 feet near Steelman Lake in the southwestern part of the county.

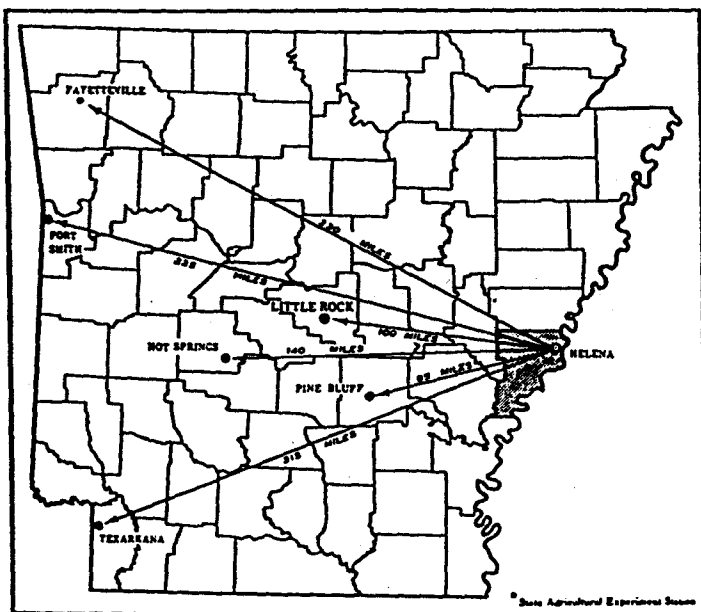


Figure 1.—Location of Phillips County in Arkansas.

## arming

Farming in Phillips County began in the better drained parts of the uplands, spread to the higher parts of the natural levees, and then gradually spread to the poorly drained flats. According to the 1969 Census of Agriculture, about 81 percent of the county, or 302,100 acres, is in farms. The rest is woodland, cities and towns, federally administered land, and transportation and utility facilities.

The early economy of the county was based on the plantation system, and cotton was the main cash crop. Farming is still the principal means of livelihood, but cropping systems have become more diversified. Since acreage allotments were placed on cotton, the importance of that crop has declined. As machinery has replaced livestock as a source of power, corn and other feed crops have also declined in importance. Soybeans and small grain have increased in importance.

Most farming in Phillips County is of a general nature. Soybeans, cotton, and wheat are the main crops, and some rice and grain sorghum are grown. Beef cattle are raised on some farms. Table 1 shows the acreage of principal crops in selected years, and table 2 gives the kinds and numbers of livestock. Over much of the county, use of improved crop varieties, improved drainage outlets, major flood control measures on the flood plains, and other improved management techniques has led to rapid expansion of farming in the wetter areas and to a great reduction in the acreage of woodland.

Farms in Phillips County, as in most of eastern Arkansas, are decreasing in number and increasing in size. Between 1964 and 1969, the number of farms decreased from 1,336 to 981 and the average size increased from 251 acres to 362 acres. Farms of 220 acres or more increased from 324 in 1964 to 346 in 1969. Farms smaller than 220 acres decreased in number. Those of less than 100 acres decreased in number the most—from 837 in 1964 to 483

in 1969. Those larger than 1,000 acres increased from 78 to 89. In 1969, 359 farm operators were full owners, 365 were part owners, and 257 were tenants. Of these operators, 419 held jobs off the farm and 255 worked off the farm for 100 days or more.

The number of livestock in the county has been decreasing for several years. Most beef cattle are of good grade. Milk cows generally are of poor quality and are kept mainly for home use.

Farm-related enterprises in the county include cotton gins, compresses, and warehouses; seed oil mills; grain and soybean elevators and driers served by railway, truck, and bargeline facilities; fertilizer and farm chemical factories; and farm equipment and supply companies.

Most of the farms are small enough that the family can do most of the work and use outside labor only during peak seasons. The larger farms are operated by laborers supervised by the owner, manager, or tenant. Tenants pay a fixed rent or a percentage of the crop for use of the land. Most of the land is farmed by operators who have sufficient modern equipment to farm efficiently. Most farmers apply fertilizer according to the needs of the crop, and many use chemicals for weed control.

## Physiography and Drainage

The geological deposits at the surface of Phillips County are alluvium and loess. Generally, alluvium is in the southern part of the county and loess is in the northern part. These deposits are the parent materials of the soils in the county. The alluvial sediment is more than 200 feet thick over unconsolidated material. The loess is about 5 feet to more than 50 feet thick over unconsolidated old alluvium and coastal plain sediments. Bedrock probably is at a depth of many hundreds of feet throughout the county.

The alluvium is a mixture of minerals from throughout the Mississippi River Basin. It was derived from many kinds of soil, rock, and unconsolidated sediments that came from many States.

The topography of the county can be divided into three main areas. These are the level to gently undulating bottom lands, the moderately steep to steep Crowley Ridge, and the level to moderately sloping upland plain west of Crowley Ridge.

The topography of the bottom lands ranges from broad flats to areas of alternating swales and low ridges. Except along a few streambanks, differences in elevation are minor. Slopes generally are less than 1 percent, but they are as much as 3 percent on the sides of some low ridges.

In the Crowley Ridge area, the topography is characterized by ridges that have narrow, winding tops, short side slopes, and narrow valleys between the ridges. Slopes on the ridges predominantly range from 12 to 40 percent, but along valley drainageways they generally are less than 1 percent.

West of Crowley Ridge, the upland plain is predominantly level to nearly level and slopes are less than 3 percent. Scattered low ridges and escarpments along drainageways have slopes of 3 to 12 percent.

The drainage in the county generally is southwestward through a system of natural and improved drainageways

TABLE 1.—Acreage of principal crops in stated years

Crops	1964	1969
Soybeans (harvested for beans).....	162,885	208,932
Cotton.....	76,093	66,923
Wheat.....	14,157	1,713
Other small grain (includes rice).....	5,050	4,596
Corn (for all purposes).....	4,202	1,636
Hay (excludes acreage on levees).....	2,171	1,916
Pasture (excludes acreage on levees).....	5,841	8,337

TABLE 2.—Kinds and numbers of livestock in stated years

Livestock	1964	1969
All cattle and calves.....	10,032	9,163
Milk cows.....	436	202
Hogs and pigs.....	3,859	6,359
Chickens (more than 3 months old).....	32,712	13,676

and connecting artificial channels. A small area in the northeastern corner drains southeastward. The county is well supplied with drainageways and lakes. The major natural drainageways are the Mississippi, St. Francis, and White Rivers; Porter, Beaver, Johnson, Long Lake, Cypress, Yellow Bank, Gauzley, and Little Bee Bayous; and Big Lick, and Little Cypress Creeks.

Big Creek, Lick Creek, and Little Cypress Creek drain the northern part of the county. Long Lake, Beaver, and Johnson Bayous drain the central part of the county and empty by way of Big Creek into the White River. Porter Bayou and the St. Francis River drain the northeastern part of the county and empty into the Mississippi River. Cypress, Yellow Bank, Gauzley, and Little Bee Bayous drain the southern part of the county. Their waters are pumped, or pass through levee floodgates, into the White River. Thus, most of the county drains into the White River, but the northeastern corner and a narrow strip between the Mississippi River and its levee drain into the Mississippi River.

The many streams, as well as lakes such as Storm Creek, Porter, Old Town, Old River, and others, furnish abundant surface water for recreation, farming, and industry. The supply of ground water is also abundant. Wells 10 inches in diameter, drilled to a depth of about 120 feet, furnish an unfailing flow of water of good to fair quality at a rate of about 1,500 to 1,800 gallons per minute.

## Climate<sup>1</sup>

Phillips County lies between the White and Mississippi Rivers in east-central Arkansas. The county is nearly

<sup>1</sup>ROBERT O. REINHOLD, climatologist for Arkansas, National Weather Service, U.S. Department of Commerce, prepared this subsection.

level except for a small area in the northeastern corner, and large hilly areas are too distant to have a noticeable effect on the climate of the county. The relatively treeless, predominantly cultivated countryside offers little hindrance to windflow, and surface windspeed may be somewhat greater than in more rugged, wooded terrain. Table 3 gives a summary of temperature and precipitation data recorded at Helena, which are representative for the county.

The climate of Phillips County, like all of Arkansas, is one of generally warm summers and mild winters. Although there are periods of arctic weather, these cold fronts generally are of short duration, and winters are relatively free of severe cold and snow. Outdoor work can be done during much of the winter.

The most abrupt and violent weather changes are in spring. Strong frontal passages are often accompanied by turbulent weather and high-intensity rains.

Summers are long, warm, and highly humid because of the moisture brought in from the Gulf of Mexico. Evaporation from the streams, lakes, and marshes, and flooded ricefields contributes to the high humidity. Annual average relative humidity is about 70 percent. Uncomfortably high temperatures and humidity are likely from mid-May to mid-September.

In fall, days are warm and nights are cool. This is the driest and least humid season and is commonly the most pleasant. Prewinter cold fronts and sharp drops in temperature occur late in October and in November, but these generally are not accompanied by significant turbulence as are the front passages in spring. Dry airmasses are most likely in fall, when the day-to-night temperature range is the greatest.

The county has a wide range of temperature extremes.

TABLE 3.—*Temperature and precipitation*  
[Data from Helena, Arkansas; period of record, 1941-70]

Month	Temperature				Precipitation		
	Average daily maximum	Average daily minimum	Two years in 10 will have at least 4 days with—		Average total	One year in 10 will have—	
			Maximum temperature equal to or higher than—	Minimum temperature equal to or lower than—		Less than—	More than—
	° F.	° F.	° F.	° F.	Inches	Inches	Inches
January.....	51.0	32.2	76	6	4.72	1.60	9.22
February.....	54.9	34.9	77	13	4.84	2.21	7.62
March.....	62.5	41.4	83	20	5.43	2.70	8.26
April.....	74.0	52.3	88	32	5.30	2.86	8.34
May.....	81.9	60.3	94	42	4.18	1.21	8.20
June.....	89.1	67.9	99	53	3.23	.44	6.43
July.....	91.7	70.7	100	56	3.73	.91	5.61
August.....	90.9	69.2	102	56	3.07	.56	6.12
September.....	85.2	62.4	98	45	3.27	1.16	6.23
October.....	76.3	50.9	90	31	2.91	.69	5.71
November.....	63.2	40.7	81	20	4.09	1.86	7.59
December.....	53.2	34.1	76	13	4.82	2.05	7.61
Year.....	72.8	51.4			49.59		

## Convent Series

The Convent series consists of somewhat poorly drained, level soils on young natural levees and on alluvial fans at the foot of Crowley Ridge. These soils formed in stratified beds of loamy sediments.

In a representative profile, the surface layer is dark grayish-brown silt loam about 7 inches thick. The material beneath is stratified layers of grayish-brown, dark-gray, and gray, mottled silt loam.

Convent soils are high in natural fertility. Content of organic matter is medium to low. Permeability is moderate, and the available water capacity is high. These soils respond well to fertilizer, and good tilth is easy to maintain. In places a plowpan has formed beneath the plow layer. This pan restricts penetration of roots and movement of water through the soil.

These soils are suited to most crops commonly grown in the county. About half of the acreage is cultivated. The rest is within built-up areas or within the St. Francis National Forest.

Representative profile of Convent silt loam in a moist, cultivated area in SE $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 10, T. 2 S., R. 4 E.:

- Ap—0 to 7 inches, dark grayish-brown (10YR 4/2) silt loam; weak, fine, granular structure; friable; many fine roots; neutral; abrupt, smooth boundary.
- C1—7 to 21 inches, grayish-brown (10YR 5/2) silt loam; many, medium, distinct, dark yellowish-brown (10YR 4/4) mottles; weak, coarse, platy structure; friable; common bedding planes; common fine roots; common pores; moderately alkaline; gradual, smooth boundary.
- C2—21 to 41 inches, grayish-brown (10YR 5/2) silt loam; common, medium, distinct, dark yellowish-brown (10YR 4/4) mottles; weak, coarse, platy structure; friable; common bedding planes; few fine roots; common pores; few, fine, black concretions; mildly alkaline; abrupt, smooth boundary.
- C3—41 to 56 inches, grayish-brown (10YR 5/2) silt loam; common, fine, distinct, yellowish-brown mottles; weak, medium, platy structure; friable; many bedding planes; mildly alkaline; abrupt, smooth boundary.
- C4g—56 to 65 inches, dark-gray (10YR 4/1) silt loam; many, fine, prominent, yellowish-red mottles; weak, coarse, platy structure; friable; common bedding planes; common pores; neutral; abrupt, smooth boundary.
- C5g—65 to 73 inches, gray (10YR 5/1) silt loam; many, fine, prominent, yellowish-red mottles; weak, coarse, platy structure; friable, few bedding planes; common pores; few, fine, black concretions; neutral.

The A horizon is dark grayish brown to brown. The upper part of the C horizon is dark grayish-brown or grayish-brown, thinly stratified silt loam to fine sandy loam. The Cg horizon is light brownish gray to dark gray. Reaction ranges from neutral to moderately alkaline throughout the profile.

Convent soils are chiefly associated with Falaya and Jeanerette soils. They are neutral to moderately alkaline in reaction throughout the profile, whereas the Falaya soils have a thick A horizon that is strongly acid or very strongly acid. They contain less clay, have a lighter-colored A horizon, and are better drained than the Jeanerette soils.

Convent silt loam (Co).—This soil is on young natural levees and on alluvial fans at the foot of Crowley Ridge. Individual areas range from about 50 to 200 acres in size. Slope is less than 1 percent. Included in mapping were small spots of Falaya and Jeanerette soils.

This soil is well suited to farming. Water on the surface early in spring may delay planting. Clean-tilled crops that leave a large amount of residue can be safely

grown year after year if this soil is adequately drained and other good management is used.

The main crops are soybeans and cotton. Corn, grain sorghum, alfalfa, winter small grain, and such truck crops as okra, green beans, and tomatoes also are suited. Suitable pasture plants are bermudagrass, tall fescue, and white clover. (Capability unit IIw-1; woodland group 1w5)

## Crevasse Series

The Crevasse series consists of excessively drained, level to gently undulating soils at the highest elevations on natural levees. These soils formed in sandy sediments.

In a representative profile, the surface layer is dark grayish-brown fine sand about 8 inches thick. Beneath are stratified layers of grayish-brown and dark grayish-brown fine sand and loamy fine sand.

Crevasse soils are low in natural fertility, and the content of organic matter is low. Permeability is rapid. The available water capacity is low. These soils respond moderately well to fertilizer, and good tilth is easy to maintain. They warm early in spring and can be planted early, but they are droughty and subject to flooding.

These soils are poorly suited to farming, and only about half of the acreage is cultivated.

Representative profile of a Crevasse fine sand in a moist, cultivated area of Crevasse soils, frequently flooded, on Island No. 64 (survey incomplete; approximate location, by extension of existing section lines, is NW $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 25, T. 5 S., R. 2 E.):

- Ap—0 to 8 inches, dark grayish-brown (10YR 4/2) fine sand; single grain; loose; many fine roots; slightly acid; abrupt, smooth boundary.
- C1—8 to 17 inches, grayish-brown (10YR 5/2) fine sand; single grain; loose; common fine roots; common lenses of dark grayish-brown (10YR 4/2) loamy fine sand about  $\frac{1}{8}$  inch thick; mildly alkaline; abrupt, smooth boundary.
- C2—17 to 51 inches, grayish-brown (10YR 5/2) fine sand; single grain to weak, platy structure; loose; few fine roots; many lenses of dark grayish-brown (10YR 4/2) loamy fine sand about  $\frac{1}{8}$  inch thick; mildly alkaline; clear, smooth boundary.
- C3—51 to 64 inches, dark grayish-brown (10YR 4/2) loamy fine sand; common, medium, distinct, light brownish-gray (10YR 6/2) mottles; massive; loose; few fine roots; mildly alkaline.

The Ap horizon is dark grayish-brown or dark-brown loamy sand to fine sand. The C horizon is dark grayish-brown, brown, or yellowish-brown loamy fine sand to fine sand. Reaction ranges from slightly acid to moderately alkaline throughout the profile.

Crevasse soils are chiefly associated with Robinsonville and Commerce soils, but they are coarser textured and better drained than those soils.

Crevasse soils, frequently flooded (Cr).—This undifferentiated group consists of level to gently undulating soils at the higher elevations bordering the Mississippi River. Generally, the soils are in areas where long, narrow depressions alternate with low ridges that rise 3 to 8 feet above the swales. Slope is less than 3 percent. These soils are in areas 10 to 100 acres in size between the levee and the Mississippi River. They are flooded for periods of 3 to 95 days, generally between January and June. Floods occur on an average of about once every 2 years. The surface layer ranges from loamy sand to fine sand.

medium, distinct, dark yellowish-brown (10YR 4/4) mottles; weak, medium, subangular blocky structure; friable; common fine roots; common pores; common, fine, black concretions; strongly acid; clear, smooth boundary.

A22g—19 to 25 inches, gray (10YR 6/1) silt loam; common, medium, distinct, brown (10YR 5/3) mottles; moderate, medium subangular blocky structure; friable; common fine roots; common pores; few, fine, black concretions; strongly acid; clear, smooth boundary.

Bx1—25 to 33 inches, gray (10YR 6/1) silty clay loam; few, medium and fine, distinct, dark yellowish-brown (10YR 4/4) mottles; weak, medium prismatic structure parting to weak, medium, subangular blocky; firm, brittle; common clay films on faces of peds; gray silt in seams between prisms and on faces of peds; common pores; few, fine, black concretions; very strongly acid; clear, smooth boundary.

Bx2—33 to 49 inches, light brownish-gray (10YR 6/2) silty clay loam; few, fine, distinct, light olive-brown mottles; moderate, medium, subangular blocky structure; firm, brittle; patchy clay films on faces of peds; common pores; common, fine and medium, black concretions; very strongly acid; clear, smooth boundary.

B3g—49 to 60 inches, light olive-gray (5Y 6/2) silt loam; common, medium, distinct, yellowish-brown (10YR 5/6) mottles and common, fine, distinct, brown mottles; weak, coarse, subangular blocky structure; friable; common pores; common, fine, black concretions; strongly acid; clear, smooth boundary.

Cg—60 to 74 inches, light brownish-gray (2.5Y 6/2) silt loam; few, medium, distinct, yellowish-brown (10YR 5/6) and dark yellowish-brown (10YR 4/4) mottles; massive; friable; common, fine, black concretions; slightly acid.

The Ap or A1 horizon is dark gray to brown. The A2g horizon is gray or light brownish gray. The Bx horizon is gray, light olive gray, or light brownish gray. The B3g horizon is silt loam or silty clay loam and has the same range of colors as the Bx horizon. The Ap or A1 horizon is slightly acid to very strongly acid, the A2 and B horizons are very strongly acid or strongly acid, and the C horizon is very strongly acid to mildly alkaline.

Henry soils are chiefly associated with Calhoun, Calloway, Falaya, Jeanerette, Lagrange, and Zachary soils. They have a fragipan that the Calhoun, Falaya, Jeanerette, Lagrange, and Zachary soils lack. Henry soils are grayer than the Calloway soils and lack an A<sub>2</sub> horizon that Calloway soils have. They are more poorly drained than Falaya soils and have an A horizon of higher color value than Jeanerette soils. They are finer textured in the A horizon and the upper part of the B horizon than the Lagrange soils.

**Henry silt loam (He).**—This poorly drained soil is on broad, upland flats and in depressions. Individual areas range from 20 to 300 acres in size. Slope is less than 1 percent. Included in mapping were spots of Calhoun, Calloway, Falaya, and Zachary soils.

This soil is suited to farming, but wetness is a severe limitation. Fieldwork is delayed several days after a rain unless surface drains are installed. Clean-tilled crops that leave a large amount of residue can be safely grown year after year if this soil is adequately drained and other good management is used.

The main crops are soybeans and cotton. Grain sorghum also is suited, and winter small grain can be grown if surface drainage is adequate. Suitable pasture plants are bermudagrass, tall fescue, and white clover. (Capability unit IIIw-3; woodland group 3w9)

### Jeanerette Series

The Jeanerette series consists of poorly drained soils in level to slightly depressional areas on uplands. These

soils formed in sediments that are similar to loess but are of uncertain origin.

In a representative profile, the surface layer is silt loam about 16 inches thick. The upper 4 inches is very dark grayish-brown, and the lower 12 inches is black. The upper part of the subsoil is light brownish-gray, mottled silty clay loam about 27 inches thick, and the lower part is light brownish-gray, mottled silt loam about 17 inches thick. The material beneath is gray, mottled silt loam.

Jeanerette soils are moderate to high in natural fertility. Content of organic matter is high. Permeability is moderately slow, and the available water capacity is high. In places a plowpan has formed beneath the plow layer. This pan restricts penetration of roots and movement of water through the soil.

If these soils are adequately drained and well managed, they are suited to most crops commonly grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Jeanerette silt loam in a moist, cultivated area in SW $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 4, T. 2 S., R. 3 E.:

Ap—0 to 4 inches, very dark grayish-brown (10YR 3/2) silt loam; weak, fine, granular structure; friable; many fine roots; few, fine, black concretions; medium acid; abrupt, smooth boundary.

A12—4 to 16 inches, black (10YR 2/1) silt loam; weak, fine, granular structure; firm; common fine roots; common, fine, black concretions; slightly acid; gradual, smooth boundary.

B21tg—16 to 28 inches, light brownish-gray (2.5Y 6/2) silty clay loam; common, fine, distinct, yellowish-brown mottles; moderate, fine to medium, subangular blocky structure; firm; patchy dark-gray (10YR 4/1) clay films on faces of peds; common, fine, dark concretions; mildly alkaline; gradual, smooth boundary.

B22tg—28 to 43 inches, light brownish-gray (2.5Y 6/2) silty clay loam; common, fine, distinct, yellowish-brown mottles; moderate, medium, subangular blocky structure; firm; patchy clay films on faces of peds; common pores; common, medium and fine, calcium carbonate nodules; moderately alkaline, noncalcareous; gradual, smooth boundary.

B3g—43 to 60 inches, light brownish-gray (2.5Y 6/2) silt loam; common, fine, distinct, yellowish-brown mottles; moderate, medium, subangular blocky structure; friable; common pores; common, medium and fine, calcium carbonate nodules; moderately alkaline, noncalcareous; gradual, smooth boundary.

Cg—60 to 72 inches, gray (N 6/0) silt loam; common, medium, distinct, yellowish-brown (10YR 5/6) mottles; massive; friable; moderately alkaline.

The Ap horizon is very dark grayish brown or black. The A12 horizon is black, very dark gray, or very dark grayish brown. The B horizon is dark-gray to light brownish-gray silt loam or silty clay loam. The C horizon has a range of color similar to that of the B horizon. The A horizon is medium acid to neutral, and the B and C horizons are neutral to moderately alkaline.

About 60 percent of this soil has slightly lighter colors in the A and upper B horizons than the defined range of the series, but this difference does not alter its usefulness and behavior.

Jeanerette soils are chiefly associated with the Henry soils. They have a thicker A1 horizon that is lower in color value than that of the Henry soils, and they lack the fragipan that the Henry soils have.

**Jeanerette silt loam (Je).**—This soil is in slight depressions on uplands. Individual areas range from 15 to 80 acres in size. Slope is less than 1 percent. Included in mapping were spots of soil that has a dark-brown surface layer and spots of Henry soils.

This soil is suited to farming. Wetness is a moderate hazard, and fieldwork can be delayed several days after a rain unless surface drains are installed. Clean-tilled crops that leave a large amount of residue can be safely grown year after year if this soil is adequately drained and other good management is used.

The main crops are cotton and soybeans. Corn, grain sorghum, and winter small grain also are suited. Suitable pasture plants are bermudagrass, tall fescue, and white clover. (Capability unit IIw-1; woodland group 2w6)

## Lagrange Series

The Lagrange series consists of poorly drained, level soils on flood plains. These soils formed in moderately thick, loamy deposits that have a high content of sand and are underlain by thick, loamy deposits that have a high content of silt.

In a representative profile, the surface layer is dark yellowish-brown fine sandy loam about 6 inches thick. The upper part of the subsoil is light brownish-gray, mottled fine sandy loam about 19 inches thick, the middle part is gray, mottled fine sandy loam about 8 inches thick, and the lower part is light brownish-gray, mottled silt loam that extends to a depth of about 64 inches. The material beneath is light brownish-gray, mottled silt loam.

Lagrange soils are low in natural fertility. Content of organic matter is low. Permeability is moderately slow, and the available water capacity is moderate. These soils respond well to fertilizer, and good tilth is easy to maintain. In places a plowpan has formed beneath the plow layer. This pan restricts penetration of roots and movement of water through the soil.

These soils are suited to most crops commonly grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Lagrange fine sandy loam in a moist, cultivated area in SE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 3, T. 1 S., R. 3 E.:

Ap—0 to 6 inches, dark yellowish-brown (10YR 4/4) fine sandy loam; weak, fine, granular structure; friable; many fine roots; very strongly acid; abrupt, smooth boundary.

B11g—6 to 25 inches, light brownish-gray (10YR 6/2) fine sandy loam; common, medium, distinct, yellowish-brown (10YR 5/6) mottles; weak, coarse, subangular blocky structure; friable; common fine roots; very strongly acid; clear, smooth boundary.

B12g—25 to 33 inches, gray (10YR 6/1) fine sandy loam; common, medium, distinct, yellowish-brown (10YR 5/4) mottles; weak, coarse, subangular blocky structure; very friable; few fine roots; very strongly acid; abrupt, wavy boundary.

IIB21tg—33 to 47 inches, light brownish-gray (2.5Y 6/2) silt loam; common, medium, distinct, dark yellowish-brown (10YR 4/4) mottles; moderate, medium, subangular blocky structure; friable; patchy clay films on faces of peds and in pores; few fine roots; common pores; common, fine, dark concretions; very strongly acid; clear, smooth boundary.

IIB22tg—47 to 64 inches, light brownish-gray (10YR 6/2) silt loam; many, medium, distinct, yellowish-brown (10YR 5/4) mottles and dark yellowish-brown (10YR 4/4) mottles; moderate, medium, subangular blocky structure; firm; patchy clay films on faces of peds and in pores; common pores; common, fine and medium, dark concretions; very strongly acid; clear, smooth boundary.

IICg—64 to 72 inches, light brownish-gray (10YR 6/2) silt loam; common, medium, distinct, dark yellowish-

brown (10YR 4/4) mottles; massive; friable; many, medium, dark concretions; strongly acid.

The A horizon is dark yellowish brown, brown, or dark grayish brown. The B1 horizon is light brownish-gray or gray fine sandy loam or sandy loam mottled with brown, yellowish brown, or dark yellowish brown. The IIB and IIC horizons are light brownish gray, light gray, or gray. The A horizon is slightly acid to very strongly acid, and the B and C horizons are strongly acid or very strongly acid.

Lagrange soils are chiefly associated with Henry and Marvell soils. They are coarse-textured in the A horizon and upper part of the B horizon than Henry soils. They are more poorly drained and grayer than Marvell soils.

**Lagrange fine sandy loam (lo).**—This soil is on flood plains. Individual areas range from about 10 to 80 acres in size. Slope is less than 1 percent. Included in mapping were spots of Henry and Marvell soils.

This soil is suited to farming, but wetness is a severe limitation. Fieldwork is delayed several days after a rain unless surface drains are installed. Clean-tilled crops that leave a large amount of residue can be safely grown year after year if this soil is adequately drained and other good management is used.

The main crops are soybeans and cotton. Grain sorghum also is suited, and winter small grain can be grown if surface drainage is adequate. Suitable pasture plants are bermudagrass, tall fescue, and white clover. (Capability unit IIIw-2; woodland group 2w9)

## Loring Series

The Loring series consists of moderately well drained, nearly level to gently sloping soils on uplands. These soils formed in thick deposits of loess.

In a representative profile, the surface layer is brown silt loam about 5 inches thick. The upper 4 inches of the subsoil is dark-brown silt loam, and the middle part is dark-brown silty clay loam about 17 inches thick. The lower part is a dark-brown, mottled, brittle, silt loam fragipan about 26 inches thick. The material beneath is dark-brown, mottled silt loam.

Loring soils are moderate in natural fertility. Content of organic matter is low. Permeability is moderately slow, and the available water capacity is moderate. These soils respond well to fertilizer, and good tilth is easy to maintain. The fragipan restricts the penetration of roots and movement of water but does not seriously affect soil productivity or restrict the suitability of the soils for plants. These soils are susceptible to erosion.

These soils are suited to crops commonly grown in the county. Nearly all of the acreage is cultivated.

Representative profile of Loring silt loam, 1 to 3 percent slopes, in a moist, cultivated area in SW $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 2, T. 2 S., R. 3 E.:

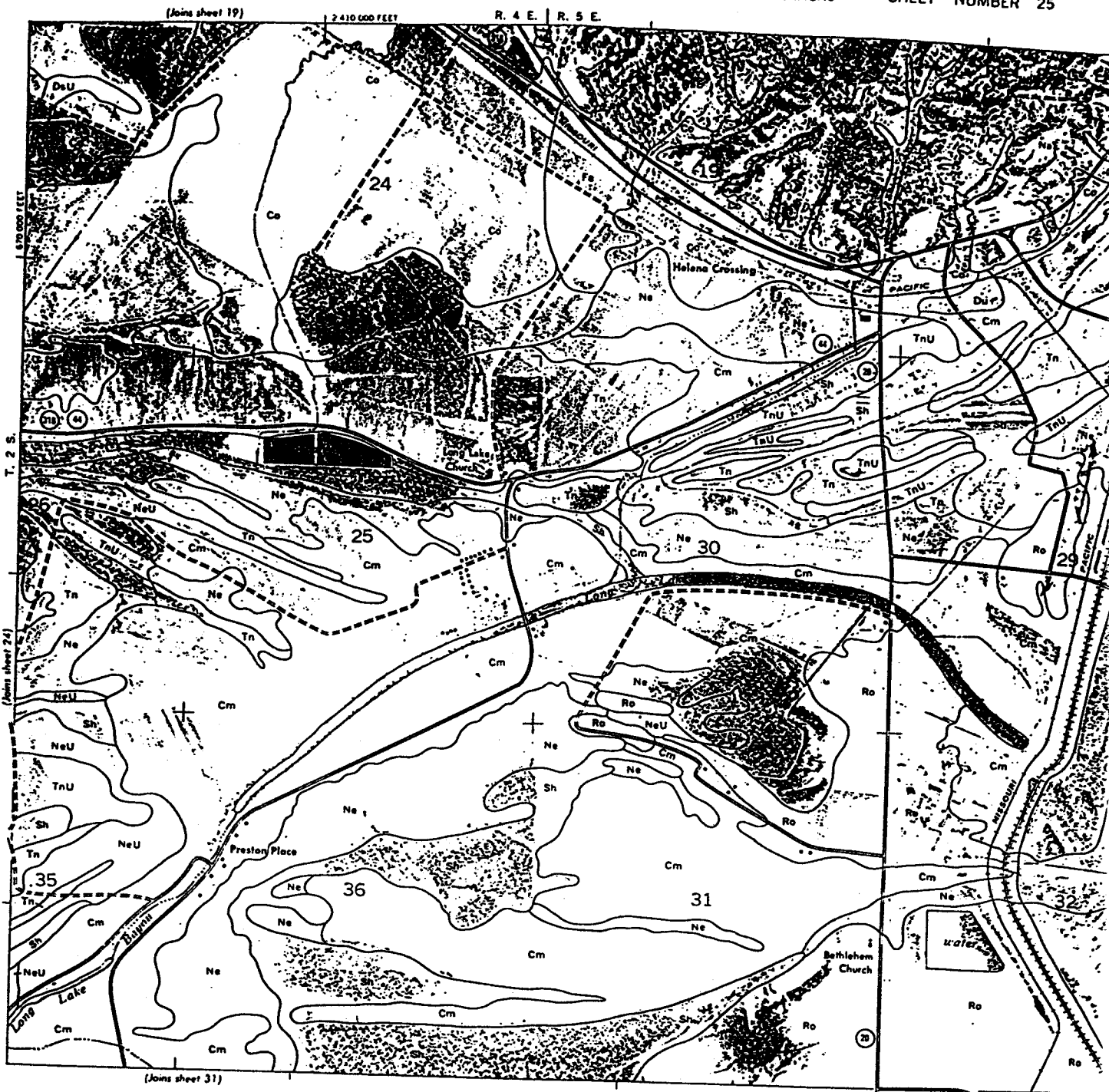
Ap—0 to 5 inches, brown (10YR 5/3) silt loam; weak, fine, granular structure; friable; many fine roots; strongly acid; abrupt, smooth boundary.

B1—5 to 9 inches, dark-brown (7.5YR 4/4) silt loam; moderate, medium, subangular blocky structure; friable; common fine roots; few pores; very strongly acid; clear, smooth boundary.

B2t—9 to 26 inches, dark-brown (7.5YR 4/4) silty clay loam; moderate, medium and fine, subangular blocky structure; firm; continuous clay films on faces of peds; few fine roots; common pores; very strongly acid; clear, smooth boundary.

Bx1—26 to 32 inches, dark-brown (7.5YR 4/4) silt loam; common, medium, distinct, light brownish-gray





## **REFERENCE 5**

S+NW

STATE OF ARKANSAS  
ARKANSAS GEOLOGICAL COMMISSION

Norman F. Williams, State Geologist

WATER RESOURCES CIRCULAR NO. 13

Alluvial Aquifer of the Cache and St. Francis River Basins

Northeastern Arkansas

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By

M. E. Broom and F. P. Lyford  
U. S. GEOLOGICAL SURVEY



Prepared by the U. S. Geological Survey in cooperation with the  
Arkansas Geological Commission  
Little Rock, Arkansas

1982

(This publication is a reprint of U. S. Geological Survey Open File Report 81-476)

ALLUVIAL AQUIFER OF THE CACHE AND ST. FRANCIS RIVER BASINS,  
NORTHEASTERN ARKANSAS

---

By M. E. Broom and F. P. Lyford

---

ABSTRACT

The alluvial aquifer underlies about 9,000 square miles of the study area. Formations of Tertiary age crop out in the alluvial plain in Crowleys Ridge, dividing the aquifer into a segment on the western side of the ridge that underlies the Cache River basin and a segment on the eastern side of the ridge that underlies the St. Francis River basin.

The aquifer is composed of sand and gravel. Maximum aquifer thickness west of Crowleys Ridge is about 150 feet and east of Crowleys Ridge, about 200 feet. Hydraulic conductivity ranges from 100 to 400 feet per day.

Well yields from the aquifer commonly range from 1,000 to 2,000 gallons per minute. Maximum specific capacity of the wells is about 100 gallons per minute per foot of drawdown.

The natural direction of flow in the aquifer has been greatly altered by intensive pumping for rice irrigation in the area between the Cache River and Crowleys Ridge. Flow toward the pumping-stressed area is eastward from the Cache River and westward from the St. Francis River. The Memphis aquifer acts as a conduit through Crowleys Ridge for induced flow from the St. Francis River basin to the Cache River basin.

Most pumpage from the alluvial aquifer in the study area since the early 1900's has been for rice irrigation. Total pumpage for rice in the study area during 1978 was about 1,650,000 acre-feet, of which about 88 percent was pumped from the aquifer west of Crowleys Ridge.

Water levels in wells west of the ridge in parts of Poinsett, Cross, and Craighead Counties during 1978 were 75 feet below land surface and declining about 2 feet per year. Water levels outside the pumping-stressed area, including all the area east of Crowleys Ridge, were less than 20 feet below land surface.

The aquifer yields a calcium bicarbonate type water that has dissolved-solids concentrations of 200 to 400 milligrams per liter in most of the area. A sodium chloride type water with chloride concentrations of about 700 milligrams per liter is pumped from the aquifer at a locale west of the Black River in Independence County and at a locale near Brinkley in Monroe County. A southerly migration of the chloride water from near Brinkley is indicated by its pattern of distribution in the aquifer.

Digital-model analysis indicated that at the end of 1978 water was being removed from aquifer storage at the rate of 540,000 acre-feet per year, and streamflow, about one-half from the Cache River, was being captured at the rate of 430,000 acre-feet per year.

Projecting the 1978 pumping rate of 1,460,000 acre-feet per year, the pumping rate would have to be reduced by about 110,000 acre-feet per year by 1990 to sustain sufficient aquifer saturation for water needs through 2000 in all parts of Poinsett, Craighead, and Cross Counties west of Crowleys Ridge.

At the reduced pumping rate of 1,350,000 acre-feet per year, beginning in 1991, saturated thickness of the aquifer west of Crowleys Ridge by the end of 2000 would be less than 50 feet in most of Poinsett and Craighead Counties and a substantial part of Cross County; the rate of water removal from aquifer storage would be about 490,000 acre-feet per year, and the rate of streamflow capture would be about 860,000 acre-feet per year.

## INTRODUCTION

The study area, in northeast Arkansas (fig. 1), includes about 9,000 square miles of the Mississippi Alluvial Plain and, peripherally, about 2,000 square miles of the Springfield-Salem Plateaus. The plateaus are discussed in this report only to establish boundary conditions near the juncture of the alluvial plain and the plateaus.

The study, in cooperation with the Arkansas Geological Commission, was made to provide information for planning, developing, and managing the water resources of the area. The study consisted of two phases. The first phase involved the collection and analysis of data to gain a concept of the aquifer's geometry and hydrologic properties, the location and nature of its recharge and discharge boundaries, and its relation to streams and to other aquifers. The second phase of work involved a simulation of the aquifer by a digital model that would provide estimates of response to pumping stress on the aquifer.

The study was enhanced greatly by data provided by well drillers, municipalities, and industries. The study would have been nearly impossible without the cooperation of the many farmers throughout the area who provided access to property and wells for measuring water levels, making aquifer tests, and drilling test holes.

## DESCRIPTION OF THE AREA

The alluvial plain slopes southward from an altitude of about 300 feet near the State line in Clay County to an altitude of about 150 feet near the confluence of the White and Mississippi Rivers in Desha County (pl. 1). The plain has little surface relief except at boundaries of stream flood plains and terraces, and at locally occurring sandhills and ridges in the western part of the plain.

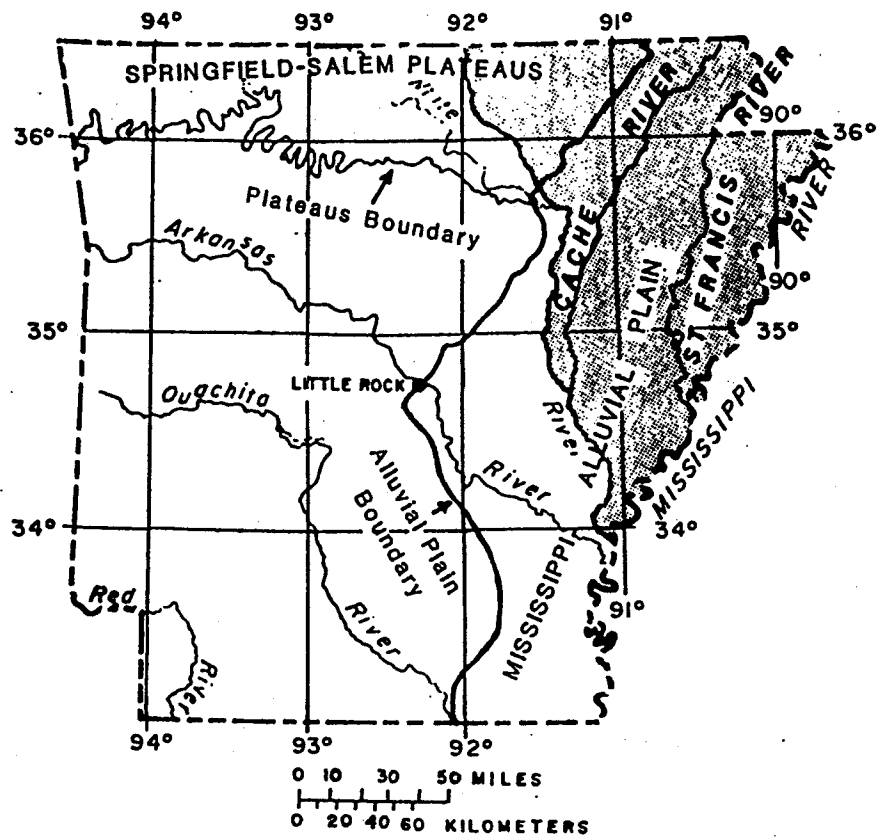


Figure 1.-Location of study area (shaded).

The greatest relief on the plain, as much as 300 feet, is at Crowleys Ridge. The ridge trends across the plain in a north-south arc, nearly bisecting the plain from Clay to Phillips County. The width of the ridge ranges from 1 to 12 miles, and altitudes along its crest commonly are 400 to 500 feet, with a maximum of about 560 feet in Greene County. Except for a breach along the course of the L'Anguille River in Lee County, the ridge is continuous from Clay County to its terminus in Phillips County.

The area in the Springfield-Salem Plateaus provides a variable terrain of rolling hills and steeply sloping valleys and ridges. The plateaus slope southeastward from an altitude of about 1,000 feet in Fulton County to an altitude of about 300 feet at the alluvial plain.

Normal annual precipitation in the area, based on an 84-year National Weather Service record at Jonesboro (Craighead County), through 1978, is 48.43 inches. Normal monthly precipitation is fairly uniform throughout the year, ranging from a minimum of 3.15 inches during August to a maximum of 5.07 inches during March. Normal annual temperature for the area is about 60°F (16°C). Normal monthly temperatures range from a low of 39°F (4°C) in January to a high of 80°F (27°C) in July.

The plain east of Crowleys Ridge is drained by the St. Francis River, tributary to the Mississippi River. In addition, a part of the plain west of the ridge drains to the St. Francis by way of the L'Anguille River through the breach in Crowleys Ridge (pl. 1). The rest of the plain west of Crowleys Ridge is drained by tributaries to the White River, including the Cache and Black Rivers and Big Creek. The plateaus area is drained primarily by the Spring and Strawberry Rivers, which are tributaries to the Black River.



The drainage system in the alluvial plain has undergone considerable alteration during the last 50 years or more by drainage-improvement projects for flood control and the conversion of hardwood-forested wetlands to highly productive farmlands for cotton, soybeans, and rice. Drainage improvements include deepening and straightening of sluggish and meandering streams, and construction of levees and ditches. To date (1980), practically all the drainage system is at least indirectly affected by drainage improvement, although forested wetlands still exist in some flood-plain areas.

#### GEOHYDROLOGY

Geologic units in the study area (pl. 1) are mostly on the western flank of the Mississippi embayment, a structural trough whose axis trends along the Mississippi River. From the Springfield-Salem Plateaus, the pre-Quaternary units dip toward the embayment axis and are overlain by successively younger units in the dip direction. In the alluvial plain, the pre-Quaternary units, ranging in age from Ordovician to Tertiary, are truncated and blanketed by Quaternary alluvium, except on Crowleys Ridge where Tertiary units crop out or are capped by older Quaternary deposits.

The structural and stratigraphic relation of the alluvial aquifer to adjacent geohydrologic units is shown in geohydrologic sections of plate 2. The control for the sections was provided by geophysical and lithological logs of test holes (table 1). The vertical scale of the sections is greatly exaggerated, distorting the slope of the land surface in the Crowleys Ridge area and the dip of the pre-Quaternary units. The dip of the pre-Quaternary units is only about 40 feet per mile.

Although extensively used at Memphis, Tenn., across the Mississippi River from Crittenden County (pl. 1), the Memphis aquifer in the study area is used little for water supply. The aquifer yields as much as 500 gallons per minute of water to wells in area 6. In Mississippi and Crittenden Counties, the aquifer probably would yield as much as 1,000 gallons per minute to wells. The water in the Memphis aquifer in area 6, is a calcium bicarbonate type with dissolved solids ranging from 200 to 500 milligrams per liter.

#### Jackson-Claiborne Clay

The Jackson-Claiborne clay directly underlies the alluvial aquifer in area 7 (pl. 1) and crops out on Crowleys Ridge in Cross, St. Francis, Lee and Phillips Counties. This geohydrologic unit reaches a maximum thickness of about 500 feet. It contains the Jackson Group, mostly a dense clay, and the upper part of the Claiborne Group, a silty clay with some interbedding of thin and discontinuous beds of sand. The Jackson-Claiborne clay acts as a confining bed under the alluvial aquifer.

#### Crowleys Ridge Deposits

The Crowleys Ridge deposits, as a geohydrologic unit, include all Quaternary sediments on Crowleys Ridge. The sediments generally consist of clay, silt, sand, and gravel of fluvial origin. The sediments also include wind-deposited silt and sand (loess) in the uppermost part of the unit along the ridge from Poinsett to Phillips Counties.

The Crowleys Ridge deposits where saturated are used for domestic water supplies. The water generally contains less than 100 milligrams per liter of dissolved solids.

## **REFERENCE 6**

# Arkansas Pollution Control and Ecology Commission

## Regulation 2



### **Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas**

**APRIL 1998**

## DESIGNATED USES: DELTA ECOREGION

(Plates D-1, D-2, D-3, D-4)

### Extraordinary Resource Waters

Second Creek (D-4)

Cache River above Cache Bayou - adjacent to natural areas (D-3)

Arkansas River below Dam #2 (D-5)

Strawberry River (D-1)

Two Prairie Bayou adjacent to natural areas (D-3)

### Natural and Scenic Waterways

None

### Ecologically Sensitive Waterbodies

Lower St. Francis River and lower 10 miles of Straight Slough - location of fat pocketbook mussel (D-2, D-4)

Right Hand Chute at confluence with St. Francis River - location of fat pocketbook mussel (D-2)

Depatee Creek - location of flat floater mussel (D-1)

Black River at mouth of Spring River - location of pink mucket mussel (D-1)

Primary Contact Recreation - all streams with watersheds of greater than 10 mi<sup>2</sup> and all lakes/reservoirs

Secondary Contact Recreation - all waters

Domestic, Industrial and Agricultural Water Supply - all waters

### Fisheries

Trout - none

Lakes and Reservoirs - all

Streams

Seasonal Delta fishery - all streams with watersheds of less than 10 mi<sup>2</sup> except as otherwise provided in §2.505

Perennial Delta fishery - all streams with watersheds 10 mi<sup>2</sup> or larger and those waters where discharges equal or exceed 1 CFS

### Use Variation Supported by UAA

Unnamed ditch to Little Lagrue Bayou - perennial Delta fishery (D-3, #1)

Little Lake Bayou - seasonal Delta fishery; no primary contact (D-5, #2)

Coon Creek and unnamed tributary from Frit Ind. - no domestic water supply use (D-1, #3)

## **REFERENCE 7**



# The Department of Arkansas Heritage

Mike Huckabee, Governor  
Cathie Matthews, Director

Arkansas Arts Council

Arkansas Historic  
Preservation Program

Arkansas Territorial Restoration

Delta Cultural Center

Old State House Museum



## Arkansas Natural Heritage Commission

1500 Tower Building

323 Center Street

Little Rock, AR 72201

(501) 324-9619

fax: (501) 324-9618

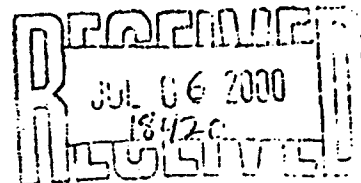
tdd: (501) 324-9811

e-mail: [info@dah.state.ar.us](mailto:info@dah.state.ar.us)

website:

<http://naturalheritage.com>

An Equal Opportunity Employer



## MEMORANDUM

To: William Penn, Hazardous Waste Inspector  
Arkansas Department of Environmental Quality

From: Cindy Osborne, Data Manager *Cindy Osborne*  
Arkansas Natural Heritage Commission

Date: July 3, 2000

ANHC No.: S-ADEQ-00-011

Subject: Site Inspection, BPS Facility, South of West Helena, AR.

Attached is a list of Elements of Special Concern known to occur within a one, four, and a fifteen mile radius of the BPS Facility south of West Helena, Arkansas. No occurrences have been recorded within a one mile radius. One occurrence has been recorded within a four mile radius of the review site, and 41 within a fifteen mile radius. An occurrence represents a location which provides habitat for sensitive species (both state and federal species), is an outstanding example of a natural community, or is a colonial bird nesting site.

Our records indicate the following managed areas fall within the fifteen mile radius:

### Federal Managed Areas:

St. Francis National Forest - U.S. Forest Service

Turkey Ridge Research Natural Area - U.S. Forest Service

St. Francis Wildlife Management Area - U.S. Forest Service, Arkansas Game and Fish Commission.

ARKANSAS NATURAL HERITAGE COMMISSION  
DEPARTMENT OF ARKANSAS HERITAGE  
INVENTORY RESEARCH PROGRAM  
ELEMENTS OF SPECIAL CONCERN  
WITHIN 15, 4, OR 1-MILE RADIUS OF  
BPS FACILITY, WEST HELENA, AR

ELEMENT NAME	FEDERAL STATUS	STATE STATUS	GLOBAL RANK	STATE RANK
<b>** Animals</b>				
* Vertebrates				
<u>AMMODRAMUS SAVANNARUM</u> , GRASSHOPPER SPARROW		INV	G5	S3B
<u>ATRACTOSTEUS SPATULA</u> , ALLIGATOR GAR		INV	G5	S2?
<u>HIODON ALOSIDES</u> , GOLDEYE		INV	G5	S2?
<u>LIMNOTHLYPIS SWAINSONII</u> , SWAINSON'S WARBLER		INV	G4	S3B
<u>SCAPHIRHYNCHUS ALBUS</u> , PALLID STURGEON	LE	INV	G1G2	S1
<u>STERNA ANTILLARUM</u> <u>ATHALASSOS</u> , INTERIOR LEAST TERN	LE	INV	G4T2Q	S2B
<b>** Plants</b>				
* Vascular Plants				
<u>CAREX HITCHCOCKIANA</u> , HITCHCOCK'S SEDGE		INV	G5	S1
<u>CAREX LAXIFLORA</u> , LOOSE-FLOWERED SEDGE		INV	G5	S3
<u>CAREX NORMALIS</u> , A SEDGE		INV	G5	S?
<u>JUGLANS CINEREA</u> , BUTTERNUT		INV	G3G4	S3
<u>OBOLARIA VIRGINICA</u> , VIRGINIA PENNYWORT		INV	G5	S2
<u>OSMORHIZA CLAYTONII</u> , HAIRY SWEET-CICELY		INV	G5	S1S3
<u>SCHISANDRA GLABRA</u> , CLIMBING MAGNOLIA		INV	G5	S2S3
<u>ZANNICHELLIA PALUSTRIS</u> , HORNED PONDWEED		INV	G5	S2S3
<b>** Natural Communities</b>				
MIXED MESOPHYTIC FOREST		INV	-	S4
RIVER FRONT FOREST		INV	-	S3

 -These elements are recorded within a 4-mile radius of the review site.

No elements are recorded within a 1-mile radius of the review site.



## LEGEND

### STATUS CODES

#### FEDERAL STATUS CODES

- C** = Candidate species. The U.S. Fish and Wildlife Service has enough scientific information to warrant proposing these species for listing as endangered or threatened under the Endangered Species Act.
- LE** = Listed Endangered; the U.S. Fish and Wildlife Service has listed these species as endangered under the Endangered Species Act.
- LT** = Listed Threatened; the U.S. Fish and Wildlife Service has listed these species as threatened under the Endangered Species Act.
- LELT** = Listed Endangered and Threatened; the U.S. Fish and Wildlife Services has listed these species as endangered and threatened in different parts of the breeding range.
- PE** = Proposed Endangered; the U.S. Fish and Wildlife Service has proposed these species for listing as endangered.
- PT** = Proposed Threatened; the U.S. Fish and Wildlife Service has proposed these species for listing as threatened.
- T/SA** = Threatened (or Endangered) because of similarity of appearance.  
**E/SA**

#### STATE STATUS CODES

- INV** = Inventory Element; The Arkansas Natural Heritage Commission is currently conducting inventory work on these elements to determine their status in the state. These elements may include outstanding examples of Natural Communities, colonial nesting sites, outstanding scenic and geologic features as well as plants and animals which, according to current information, may be rare, peripheral, or of an undetermined status in the state.
- SE** = State Endangered; The Arkansas Natural Heritage Commission applies this term to native taxa which are in danger of being extirpated from the state.
- ST** = State Threatened; The Arkansas Natural Heritage Commission applies this term to native taxa which are believed likely to become endangered in Arkansas in the foreseeable future, based on current inventory information.

### DEFINITION OF RANKS

#### Global Ranks

- G1** = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.
- G2** = Imperiled globally because of rarity (6-20 occurrences or few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.
- G3** = Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single western state, a physiographic region in the East) or because of other factors making it vulnerable to extinction throughout its range; in terms of occurrences, in the range of 21 - 100.
- G4** = Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.

# **REFERENCE 8**

POPULATION AROUND BPS

---

CNTY:

LOCATION:

34.513000, -90.645721

METHOD:

Block Group Proration method.

Number Of Persons:

35

RADIUS:

0.25 miles

SOURCE:

Summary of 1 Block Groups

---

POPULATION AROUND BPS

---

CNTY:

LOCATION:

34.513000, -90.645721

METHOD:

Block Group Proration method.

Number Of Persons:

106

RADIUS:

0.50 miles

SOURCE:

Summary of 2 Block Groups

---

POPULATION AROUND BPS

---

CNTY:

LOCATION:

34.513000, -90.645721

METHOD:

Block Group Proration method.

Number Of Persons:

106

RADIUS:

1.00 miles

SOURCE:

Summary of 3 Block Groups

---

POPULATION AROUND BPS

---

CNTY:

LOCATION:

34.513000, -90.645721

METHOD:

Block Group Proration method.

Number Of Persons:

802

RADIUS:

2.00 miles

SOURCE:

Summary of 10 Block Groups

---

POPULATION AROUND BPS

---

CNTY:

LOCATION:

34.513000, -90.645721

METHOD:

Block Group Proration method.

Number Of Persons:

2462

RADIUS:

3.00 miles

SOURCE:

Summary of 18 Block Groups

---

POPULATION AROUND BPS

---

CNTY:

LOCATION:

34.513000, -90.645721

METHOD:

Block Group Proration method.

Number Of Persons:

4925

RADIUS:

4.00 miles

SOURCE:

Summary of 21 Block Groups

---



# **APPENDIX A**

## ADEQ PHOTOLOG

**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh *TS*  
**WITNESS:** Vicki Prewett *VP*

**DATE:** 9/12/00

**DIRECTION:** south east

**TIME:** 0856

**SUBJECT:** SB03

**PHOTO #1** DISK #1



**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh *TS*  
**WITNESS:** Vicki Prewett *VP*

**DATE:** 9/12/00

**DIRECTION:** south

**TIME:** 0907

**SUBJECT:** SB06

**PHOTO #2** DISK #1



**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh TS  
**WITNESS:** Vicki Prewett VP

**DATE:** 9/12/00

**DIRECTION:** west

**TIME:** 0917

**SUBJECT:** SS07

**PHOTO #3 DISK #1**



**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh TS  
**WITNESS:** Vicki Prewett VP

**DATE:** 9/12/00

**DIRECTION:** west

**TIME:** 0924

**SUBJECT:** SB09

**PHOTO #4 DISK #1**





**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh *TS*

**WITNESS:** Vicki Prewett *VP*

**DATE:** 9/12/00

**DIRECTION:** north

**TIME:** 0937

**SUBJECT:** SS01

**PHOTO #5 DISK #1**



**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh *TS*

**WITNESS:** Vicki Prewett *VP*

**DATE:** 9/12/00

**DIRECTION:** west

**TIME:** 0943

**SUBJECT:** SB01

**PHOTO #6 DISK #1**





**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh *TS*  
**WITNESS:** Vicki Prewett *VP*

**DATE:** 9/12/00

**DIRECTION:** east

**TIME:** 0952

**SUBJECT:** SS02

**PHOTO #7 DISK #1**



**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh *TS*  
**WITNESS:** Vicki Prewett *VP*

**DATE:** 9/12/00

**DIRECTION:** east

**TIME:** 1003

**SUBJECT:** SB02

**PHOTO #8 DISK #2**





**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh *TS*  
**WITNESS:** Vicki Prewett *VP*

**DATE:** 9/12/00

**DIRECTION:** east

**TIME:** 1014

**SUBJECT:** SS03

**PHOTO #9 DISK #2**



**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh *TS*  
**WITNESS:** Vicki Prewett *VP*

**DATE:** 9/12/00

**DIRECTION:** east

**TIME:** 1028

**SUBJECT:** SB04

**PHOTO #10 DISK #2**





**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh *TS*  
**WITNESS:** Vicki Prewett *VP*

**DATE:** 9/12/00

**DIRECTION:** north

**TIME:** 1045

**SUBJECT:** SS04

**PHOTO #11** **DISK #2**



**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh *TS*  
**WITNESS:** Vicki Prewett *VP*

**DATE:** 9/12/00

**DIRECTION:** north

**TIME:** 1055

**SUBJECT:** SB05

**PHOTO #12** **DISK #2**





**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh *BS*  
**WITNESS:** Vicki Prewett *VP*

**DATE:** 9/12/00

**DIRECTION:** east

**TIME:** 1107

**SUBJECT:** SS05/SS06

**PHOTO #13 DISK #2**



**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh *BS*  
**WITNESS:** Vicki Prewett *VP*

**DATE:** 9/12/00

**DIRECTION:** east

**TIME:** 1127

**SUBJECT:** SB07/SB08

**PHOTO #14 DISK #3**







**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh   
**WITNESS:** Vicki Prewett 

**DATE:** 9/12/00

**DIRECTION:** south

**TIME:** 1141

**SUBJECT:** SD01



**PHOTO #15 DISK #3**



**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh   
**WITNESS:** Vicki Prewett 

**DATE:** 9/12/00

**DIRECTION:** west

**TIME:** 1325

**SUBJECT:** SD02

**PHOTO #16 DISK #3**







**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh   
**WITNESS:** Vicki Prewett 

**DATE:** 9/12/00

**DIRECTION:** south

**TIME:** 1339

**SUBJECT:** SD03



**PHOTO #17** DISK #3



**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh   
**WITNESS:** Vicki Prewett 

**DATE:** 9/12/00

**DIRECTION:** south

**TIME:** 1356

**SUBJECT:** SD04

**PHOTO #18** DISK #3



**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh *TS*  
**WITNESS:** Vicki Prewett *VP*

**DATE:** 9/12/00

**DIRECTION:** south east

**TIME:** 1417

**SUBJECT:** SD05/SD06

**PHOTO #19**   **DISK #3**



**SITE NAME:** BPS, INC.

**SITE LOCATION:** West Helena,  
Arkansas

**EPA I.D. #:** ARD983288572

**PHOTOGRAPHER:** Terry Sligh *TS*  
**WITNESS:** Vicki Prewett *VP*

**DATE:** 9/12/00

**DIRECTION:** south west

**TIME:** 1453

**SUBJECT:** SD07

**PHOTO #20**   **DISK #4**



# **APPENDIX B**



# CHEMICAL DATA SUMMARIES

## SEMIVOLATILE ORGANIC COMPOUNDS

Case No.: 28507

Units: MG/KG

Traffic Number	FG -M63	FG -M64	FG -M65	FG -M66	FG -M67	FG -M68
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
% Solids	84.6	75.5	85.5	79	84.7	85
Location	SS01	SS02	SS03	SS04	SS05	SS06
Benzaldehyde	380 U	180 LJ	380 U	420 U	390 U	390 U
Phenol	380 U	420 U	380 U	420 U	390 U	390 U
bis-(2-Chloroethyl) ether	380 U	420 U	380 U	420 U	390 U	390 U
2-Chlorophenol	380 U	420 U	380 U	420 U	390 U	390 U
2-Methylphenol	380 U	420 U	380 U	420 U	390 U	390 U
2,2'-oxybis(1-Chloropropane)	380 U	420 U	380 U	420 U	390 U	390 U
Acetophenone	380 U	140 LJ	380 U	420 U	390 U	390 U
4-Methylphenol	380 U	420 U	380 U	420 U	390 U	390 U
N-Nitroso-di-n-propylamine	380 U	420 U	380 U	420 U	390 U	390 U
Hexachloroethane	380 U	420 U	380 U	420 U	390 U	390 U
Nitrobenzene	380 U	420 U	380 U	420 U	390 U	390 U
Isophorone	380 U	420 U	380 U	420 U	390 U	390 U
2-Nitrophenol	380 U	420 U	380 U	420 U	390 U	390 U
2,4-Dimethylphenol	380 U	420 U	380 U	420 U	390 U	390 U
bis(2-Chloroethoxy)methane	380 U	420 U	380 U	420 U	390 U	390 U
2,4-Dichlorophenol	380 U	420 U	380 U	420 U	390 U	390 U
Naphthalene	380 U	51 LJ	380 U	420 U	390 U	390 U
4-Chloroaniline	380 U	420 U	380 U	420 U	390 U	390 U
Hexachlorobutadiene	380 U	420 U	380 U	420 U	390 U	390 U
Caprolactam	380 U	50 LJ	380 U	420 U	22 LJ	390 U
4-Chloro-3-methylphenol	380 U	420 U	380 U	420 U	390 U	390 U
2-Methylnaphthalene	380 U	110 LJ	380 U	420 U	390 U	390 U
Hexachlorocyclopentadiene	380 U	420 U	380 U	420 U	390 U	390 U
2,4,6-Trichlorophenol	380 U	420 U	380 U	420 U	390 U	390 U
2,4,5-Trichlorophenol	970 U	1100 U	950 U	1100 U	980 U	980 U
1,1'-Biphenyl	380 U	420 U	380 U	420 U	390 U	390 U
2-Chloronaphthalene	380 U	420 U	380 U	420 U	390 U	390 U
2-Nitroaniline	970 U	1100 U	950 U	1100 U	980 U	980 U
Dimethylphthalate	380 U	420 U	380 U	420 U	390 U	390 U
2,6-Dinitrotoluene	380 U	420 U	380 U	420 U	390 U	390 U
Acenaphthylene	380 U	420 U	380 U	420 U	390 U	390 U
3-Nitroaniline	970 U	1100 U	950 U	1100 U	980 U	980 U
Acenaphthene	380 U	420 U	380 U	420 U	390 U	390 U
2,4-Dinitrophenol	970 U	1100 U	950 U	1100 U	980 U	980 U
4-Nitrophenol	970 U	1100 U	950 U	1100 U	980 U	980 U
Dibenzofuran	380 U	420 U	380 U	420 U	390 U	390 U
2,4-Dinitrotoluene	380 U	420 U	380 U	420 U	390 U	390 U
Diethylphthalate	24 LJ	35 LJ	380 U	420 U	22 LJ	20 LJ
Fluorene	380 U	420 U	380 U	420 U	390 U	390 U
4-Chlorophenyl-phenyl ether	380 U	420 U	380 U	420 U	390 U	390 U
4-Nitroaniline	970 U	1100 U	950 U	1100 U	980 U	980 U
4,6-Dinitro-2-methylphenol	970 U	1100 U	950 U	1100 U	980 U	980 U
N-Nitrosodiphenylamine	380 U	420 U	380 U	420 U	390 U	390 U
4-Bromophenyl-phenylether	380 U	420 U	380 U	420 U	390 U	390 U
Hexachlorobenzene	380 U	2300	380 U	420 U	390 U	390 U
Atrazine	380 U	420 U	380 U	420 U	390 U	390 U
Pentachlorophenol	970 U	1100 U	950 U	1100 U	980 U	980 U
Phenanthrene	380 U	28 LJ	380 U	420 U	390 U	31 LJ
Anthracene	380 U	420 U	380 U	420 U	390 U	390 U
Carbazole	380 U	420 U	380 U	420 U	390 U	390 U
Di-n-butylphthalate	27 LJ	34 LJ	22 LJ	420 U	29 LJ	29 LJ
Fluoranthene	20 LJ	420 U	380 U	420 U	390 U	77 LJ
Pyrene	20 LJ	420 U	21 LJ	420 U	390 U	75 LJ
Butylbenzylphthalate	380 U	420 U	380 U	420 U	390 U	390 U
3,3'-Dichlorobenzidine	380 U	420 U	380 U	420 U	390 U	390 U
Benzo(a)anthracene	380 U	35 LJ	380 U	420 U	390 U	51 LJ
Chrysene	20 LJ	75 LJ	380 U	420 U	390 U	62 LJ

Traffic Number	FG -M63	FG -M64	FG -M65	FG -M66	FG -M67	FG -M68
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
% Solids	84.6	75.5	85.5	79	84.7	85
Location	SS01	SS02	SS03	SS04	SS05	SS06
bis(2-Ethylhexyl)phthalate	91 LJ	420 U	380 U	420 U	390 U	390 U
Di-n-octylphthalate	380 U	420 U	380 U	420 U	390 U	390 U
Benzo(b)fluoranthene	380 U	420 U	38 LJ	420 U	390 U	74 LJ
Benzo(k)fluoranthene	380 U	33 LJ	23 LJ	420 U	390 U	23 LJ
Benzo(a)pyrene	380 U	420 U	380 U	420 U	390 U	47 LJ
Indeno(1,2,3-cd)pyrene	380 U	420 U	380 U	420 U	390 U	390 U
Dibenzo(a,h)anthracene	380 U	37 LJ	380 U	420 U	390 U	390 U
Benzo(g,h,i)perylene	380 U	420 U	380 U	420 U	390 U	390 U

U - NOT DETECTED

L - CONCENTRATION BETWEEN IDL & CRDL

UC - RAISED DETECTION LIMIT

J - ESTIMATED VALUE

^ - HIGH BIAS v - LOW BIAS

BACKGROUND SAMPLE HIGHLIGHTED

R - UNUSABLE

# CHEMICAL DATA SUMMARIES

## SEMIVOLATILE ORGANIC COMPOUNDS

Case No.: 28507

Units: UG/KG

Traffic Number	FG -M69	FG -M70	FG -M71	FG -M72	FG -M73	FG -M74
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
% Solids	89.5	91.3	82.8	91.7	91.6	80.9
Location	SS07	SB01	SB02	SB03	SB04	SB05
Benzaldehyde	370 U	360 U	380 U	360 U	360 U	400 U
Phenol	370 U	360 U	380 U	360 U	360 U	400 U
bis-(2-Chloroethyl) ether	370 U	360 U	380 U	360 U	360 U	400 U
2-Chlorophenol	370 U	360 U	380 U	360 U	360 U	400 U
2-Methylphenol	370 U	360 U	380 U	360 U	360 U	400 U
2,2'-oxybis(1-Chloropropane)	370 U	360 U	380 U	360 U	360 U	400 U
Acetophenone	370 U	360 U	380 U	360 U	360 U	400 U
4-Methylphenol	370 U	360 U	380 U	360 U	360 U	400 U
N-Nitroso-di-n-propylamine	370 U	360 U	380 U	360 U	360 U	400 U
Hexachloroethane	370 U	360 U	380 U	360 U	360 U	400 U
Nitrobenzene	370 U	360 U	380 U	360 U	360 U	400 U
Isophorone	370 U	360 U	380 U	360 U	360 U	400 U
2-Nitrophenol	370 U	360 U	380 U	360 U	360 U	400 U
2,4-Dimethylphenol	370 U	360 U	380 U	360 U	360 U	400 U
bis(2-Chloroethoxy)methane	370 U	360 U	380 U	360 U	360 U	400 U
2,4-Dichlorophenol	370 U	360 U	380 U	360 U	360 U	400 U
Naphthalene	370 U	360 U	380 U	360 U	360 U	400 U
4-Chloroaniline	370 U	360 U	380 U	360 U	360 U	400 U
Hexachlorobutadiene	370 U	360 U	380 U	360 U	360 U	400 U
Caprolactam	370 U	360 U	380 U	360 U	360 U	400 U
4-Chloro-3-methylphenol	370 U	360 U	380 U	360 U	360 U	400 U
2-Methylnaphthalene	370 U	360 U	62 LJ	360 U	360 U	400 U
Hexachlorocyclopentadiene	370 U	360 U	380 U	360 U	360 U	400 U
2,4,6-Trichlorophenol	370 U	360 U	380 U	360 U	360 U	400 U
2,4,5-Trichlorophenol	920 U	910 U	970 U	910 U	900 U	1000 U
1,1'-Biphenyl	370 U	360 U	380 U	360 U	360 U	400 U
2-Chloronaphthalene	370 U	360 U	380 U	360 U	360 U	400 U
2-Nitroaniline	920 U	910 U	970 U	910 U	900 U	1000 U
Dimethylphthalate	370 U	360 U	380 U	360 U	360 U	400 U
2,6-Dinitrotoluene	370 U	360 U	380 U	360 U	360 U	400 U
Acenaphthylene	370 U	360 U	380 U	360 U	360 U	400 U
3-Nitroaniline	920 U	910 U	970 U	910 U	900 U	1000 U
Acenaphthene	370 U	360 U	380 U	360 U	360 U	400 U
2,4-Dinitrophenol	920 U	910 U	970 U	910 U	900 U	1000 U
4-Nitrophenol	920 U	910 U	970 U	910 U	900 U	1000 U
Dibenzofuran	370 U	360 U	380 U	360 U	360 U	400 U
2,4-Dinitrotoluene	370 U	360 U	380 U	360 U	360 U	400 U
Diethylphthalate	370 U	27 LJ	380 U	360 U	360 U	400 U
Fluorene	370 U	360 U	380 U	360 U	360 U	400 U
4-Chlorophenyl-phenyl ether	370 U	360 U	380 U	360 U	360 U	400 U
4-Nitroaniline	920 U	910 U	970 U	910 U	900 U	1000 U
4,6-Dinitro-2-methylphenol	920 U	910 U	970 U	910 U	900 U	1000 U
N-Nitrosodiphenylamine	370 U	360 U	380 U	360 U	360 U	400 U
4-Bromophenyl-phenylether	370 U	360 U	380 U	360 U	360 U	400 U
Hexachlorobenzene	370 U	360 U	380 U	360 U	360 U	400 U
Atrazine	370 U	360 U	380 U	360 U	360 U	400 U
Pentachlorophenol	920 U	910 U	970 U	910 U	900 U	1000 U
Phenanthrene	370 U	360 U	380 U	360 U	360 U	400 U
Anthracene	370 U	360 U	380 U	360 U	360 U	400 U
Carbazole	370 U	360 U	380 U	360 U	360 U	400 U
Di-n-butylphthalate	29 LJ	27 LJ	23 LJ	19 LJ	24 LJ	21 LJ
Fluoranthene	370 U	360 U	380 U	360 U	360 U	400 U
Pyrene	370 U	360 U	380 U	360 U	360 U	400 U
Butylbenzylphthalate	370 U	360 U	380 U	360 U	360 U	400 U
3,3'-Dichlorobenzidine	370 U	360 U	380 U	360 U	360 U	400 U
Benzo(a)anthracene	370 U	360 U	380 U	360 U	360 U	400 U
Chrysene	370 U	360 U	380 U	360 U	360 U	400 U

Traffic Number	FG -M69	FG -M70	FG -M71	FG -M72	FG -M73	FG -M74
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
% Solids	89.5	91.3	82.8	91.7	91.6	80.9
Location	SS07	SB01	SB02	SB03	SB04	SB05
bis(2-Ethylhexyl)phthalate	71 LJ	360 U	380 U	230 LJ	290 LJ	400 U
Di-n-octylphthalate	370 U	360 U	380 U	360 U	360 U	400 U
Benzo(b)fluoranthene	370 U	360 U	380 U	360 U	360 U	400 U
Benzo(k)fluoranthene	370 U	360 U	380 U	360 U	360 U	400 U
Benzo(a)pyrene	370 U	360 U	380 U	360 U	360 U	400 U
Indeno(1,2,3-cd)pyrene	370 U	360 U	380 U	360 U	360 U	400 U
Dibenzo(a,h)anthracene	370 U	360 U	32 LJ	360 U	360 U	400 U

U - NOT DETECTED

L - CONCENTRATION BETWEEN IDL & CRDL

UC - RAISED DETECTION LIMIT

J - ESTIMATED VALUE

^ - HIGH BIAS v - LOW BIAS

BACKGROUND SAMPLE HIGHLIGHTED

R - UNUSABLE



# CHEMICAL DATA SUMMARIES

## SEMIVOLATILE ORGANIC COMPOUNDS

Case No.: 28507

Units: UG/KG

Traffic Number	FG -M75	FG -M76	FG -M77	FG -M78	FG -M79	FG -M80
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
% Solids	92.2	88	88	94.2	69.1	80.4
Location	SB06	SB07	SB08	SB09	SD01	SD02
Benzaldehyde	350 U	380 U	380 U	350 U	50 LJ	410 U
Phenol	350 U	380 U	380 U	350 U	490 U	410 U
bis-(2-Chloroethyl) ether	350 U	380 U	380 U	350 U	490 U	410 U
2-Chlorophenol	350 U	380 U	380 U	350 U	490 U	410 U
2-Methylphenol	350 U	380 U	380 U	350 U	490 U	410 U
2,2'-oxybis(1-Chloropropane)	350 U	380 U	380 U	350 U	490 U	410 U
Acetophenone	350 U	380 U	380 U	350 U	39 LJ	22 LJ
4-Methylphenol	350 U	380 U	380 U	350 U	490 U	410 U
N-Nitroso-di-n-propylamine	350 U	380 U	380 U	350 U	490 U	410 U
Hexachloroethane	350 U	380 U	380 U	350 U	490 U	410 U
Nitrobenzene	350 U	380 U	380 U	350 U	490 U	410 U
Isophorone	350 U	380 U	380 U	350 U	490 U	410 U
2-Nitrophenol	350 U	380 U	380 U	350 U	490 U	410 U
2,4-Dimethylphenol	350 U	380 U	380 U	350 U	490 U	410 U
bis(2-Chloroethoxy)methane	350 U	380 U	380 U	350 U	490 U	410 U
2,4-Dichlorophenol	350 U	380 U	380 U	350 U	490 U	410 U
Naphthalene	350 U	380 U	380 U	350 U	490 U	410 U
4-Chloroaniline	350 U	380 U	380 U	350 U	490 U	410 U
Hexachlorobutadiene	350 U	380 U	380 U	350 U	490 U	410 U
Caprolactam	350 U	380 U	380 U	350 U	490 U	410 U
4-Chloro-3-methylphenol	350 U	380 U	380 U	350 U	490 U	410 U
2-Methylnaphthalene	350 U	380 U	380 U	350 U	490 U	410 U
Hexachlorocyclopentadiene	350 U	380 U	380 U	350 U	490 U	410 U
2,4,6-Trichlorophenol	350 U	380 U	380 U	350 U	490 U	410 U
2,4,5-Trichlorophenol	890 U	940 U	940 U	870 U	1200 U	1000 U
1,1'-Biphenyl	350 U	380 U	380 U	350 U	490 U	410 U
2-Chloronaphthalene	350 U	380 U	380 U	350 U	490 U	410 U
2-Nitroaniline	890 U	940 U	940 U	870 U	1200 U	1000 U
Dimethylphthalate	350 U	380 U	380 U	350 U	490 U	410 U
2,6-Dinitrotoluene	350 U	380 U	380 U	350 U	490 U	410 U
Acenaphthylene	350 U	380 U	380 U	350 U	490 U	410 U
3-Nitroaniline	890 U	940 U	940 U	870 U	1200 U	1000 U
Acenaphthene	350 U	380 U	380 U	350 U	490 U	410 U
2,4-Dinitrophenol	890 U	940 U	940 U	870 U	1200 U	1000 U
4-Nitrophenol	890 U	940 U	940 U	870 U	1200 U	1000 U
Dibenzofuran	350 U	380 U	380 U	350 U	490 U	410 U
2,4-Dinitrotoluene	350 U	380 U	380 U	350 U	490 U	410 U
Diethylphthalate	350 U	380 U	380 U	350 U	490 U	410 U
Fluorene	350 U	380 U	380 U	350 U	490 U	410 U
4-Chlorophenyl-phenyl ether	350 U	380 U	380 U	350 U	490 U	410 U
4-Nitroaniline	890 U	940 U	940 U	870 U	1200 U	1000 U
4,6-Dinitro-2-methylphenol	890 U	940 U	940 U	870 U	1200 U	1000 U
N-Nitrosodiphenylamine	350 U	380 U	380 U	350 U	490 U	410 U
4-Bromophenyl-phenylether	350 U	380 U	380 U	350 U	490 U	410 U
Hexachlorobenzene	350 U	380 U	380 U	350 U	490 U	410 U
Atrazine	350 U	380 U	380 U	350 U	490 U	410 U
Pentachlorophenol	890 U	940 U	940 U	870 U	1200 U	1000 U
Phenanthrene	350 U	380 U	380 U	350 U	490 U	410 U
Anthracene	350 U	380 U	380 U	350 U	490 U	410 U
Carbazole	350 U	380 U	380 U	350 U	490 U	410 U
Di-n-butylphthalate	350 U	380 U	380 U	350 U	490 U	410 U
Fluoranthene	350 U	380 U	380 U	350 U	490 U	410 U
Pyrene	350 U	380 U	380 U	350 U	490 U	410 U
Butylbenzylphthalate	350 U	380 U	380 U	350 U	490 U	410 U
3,3'-Dichlorobenzidine	350 U	380 U	380 U	350 U	490 U	410 U
Benzo(a)anthracene	350 U	380 U	380 U	350 U	490 U	410 U
Chrysene	350 U	380 U	380 U	350 U	490 U	410 U

Traffic Number	FG -M75	FG -M76	FG -M77	FG -M78	FG -M79	FG -M80
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
% Solids	92.2	88	88	94.2	69.1	80.4
Location	SB06	SB07	SB08	SB09	SD01	SD02
bis(2-Ethylhexyl)phthalate	350 U	380 U	380 U	350 U	490 U	410 U
Di-n-octylphthalate	350 U	380 U	380 U	350 U	490 U	410 U
Benzo(b)fluoranthene	350 U	380 U	380 U	350 U	490 U	410 U
Benzo(k)fluoranthene	350 U	380 U	380 U	350 U	490 U	410 U
Benzo(a)pyrene	350 U	380 U	380 U	350 U	490 U	410 U
Indeno(1,2,3-cd)pyrene	350 U	380 U	380 U	350 U	490 U	410 U
Dibenzo(a,h)anthracene	350 U	380 U	380 U	350 U	490 U	410 U
Benzo(g,h,i)perylene	350 U	380 U	380 U	350 U	490 U	410 U

U - NOT DETECTED

L - CONCENTRATION BETWEEN IDL & CRDL

UC - RAISED DETECTION LIMIT

J - ESTIMATED VALUE

^ - HIGH BIAS v - LOW BIAS

BACKGROUND SAMPLE HIGHLIGHTED

R - UNUSABLE

# CHEMICAL DATA SUMMARIES

## SEMIVOLATILE ORGANIC COMPOUNDS

Case No.: 28507

Units: UG/KG

Traffic Number	FG -M81	FG -M82	FG -M83	FG -M84	FG -M85
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
% Solids	80.1	84.1	84.6	84.5	79.3
Location	SD03	SD04	SD05	SD06	SD07
Benzaldehyde	53 LJ	390 U	390 U	390 U	410 U
Phenol	430 U	390 U	390 U	390 U	410 U
bis-(2-Chloroethyl) ether	430 U	390 U	390 U	390 U	410 U
2-Chlorophenol	430 U	390 U	390 U	390 U	410 U
2-Methylphenol	430 U	390 U	390 U	390 U	410 U
2,2'-oxybis(1-Chloropropane)	430 U	390 U	390 U	390 U	410 U
Acetophenone	430 U	390 U	390 U	390 U	410 U
4-Methylphenol	430 U	390 U	390 U	390 U	410 U
N-Nitroso-di-n-propylamine	430 U	390 U	390 U	390 U	410 U
Hexachloroethane	430 U	390 U	390 U	390 U	410 U
Nitrobenzene	430 U	390 U	390 U	390 U	410 U
Isophorone	430 U	390 U	390 U	390 U	410 U
2-Nitrophenol	430 U	390 U	390 U	390 U	410 U
2,4-Dimethylphenol	430 U	390 U	390 U	390 U	410 U
bis(2-Chloroethoxy)methane	430 U	390 U	390 U	390 U	410 U
2,4-Dichlorophenol	430 U	390 U	390 U	390 U	410 U
Naphthalene	430 U	390 U	390 U	390 U	410 U
4-Chloroaniline	430 U	390 U	390 U	390 U	410 U
Hexachlorobutadiene	430 U	390 U	390 U	390 U	410 U
Caprolactam	430 U	390 U	390 U	390 U	410 U
4-Chloro-3-methylphenol	430 U	390 U	390 U	390 U	410 U
2-Methylnaphthalene	430 U	390 U	390 U	390 U	410 U
Hexachlorocyclopentadiene	430 U	390 U	390 U	390 U	410 U
2,4,6-Trichlorophenol	430 U	390 U	390 U	390 U	410 U
2,4,5-Trichlorophenol	1100 U	990 U	980 U	990 U	1000 U
1,1'-Biphenyl	430 U	390 U	390 U	390 U	410 U
2-Chloronaphthalene	430 U	390 U	390 U	390 U	410 U
2-Nitroaniline	1100 U	990 U	980 U	990 U	1000 U
Dimethylphthalate	430 U	390 U	390 U	390 U	410 U
2,6-Dinitrotoluene	430 U	390 U	390 U	390 U	410 U
Acenaphthylene	430 U	390 U	390 U	390 U	410 U
3-Nitroaniline	1100 U	990 U	980 U	990 U	1000 U
Acenaphthene	430 U	390 U	390 U	390 U	410 U
2,4-Dinitrophenol	1100 U	990 U	980 U	990 U	1000 U
4-Nitrophenol	1100 U	990 U	980 U	990 U	1000 U
Dibenzofuran	430 U	390 U	390 U	390 U	410 U
2,4-Dinitrotoluene	430 U	390 U	390 U	390 U	410 U
Diethylphthalate	430 U	390 U	390 U	390 U	410 U
Fluorene	430 U	390 U	390 U	390 U	410 U
4-Chlorophenyl-phenyl ether	430 U	390 U	390 U	390 U	410 U
4-Nitroaniline	1100 U	990 U	980 U	990 U	1000 U
4,6-Dinitro-2-methylphenol	1100 U	990 U	980 U	990 U	1000 U
N-Nitrosodiphenylamine	430 U	390 U	390 U	390 U	410 U
4-Bromophenyl-phenylether	430 U	390 U	390 U	390 U	410 U
Hexachlorobenzene	430 U	390 U	390 U	390 U	410 U
Atrazine	430 U	390 U	390 U	390 U	410 U
Pentachlorophenol	1100 U	990 U	980 U	990 U	1000 U
Phenanthrene	430 U	390 U	390 U	390 U	410 U
Anthracene	430 U	390 U	390 U	390 U	410 U
Carbazole	430 U	390 U	390 U	390 U	410 U
Di-n-butylphthalate	430 U	390 U	390 U	390 U	410 U
Fluoranthene	430 U	390 U	390 U	390 U	410 U
Pyrene	430 U	390 U	390 U	390 U	410 U
Butylbenzylphthalate	430 U	390 U	390 U	390 U	410 U
3,3'-Dichlorobenzidine	430 U	390 U	390 U	390 U	410 U
Benzo(a)anthracene	430 U	390 U	390 U	390 U	410 U
Chrysene	430 U	390 U	390 U	390 U	410 U



Traffic Number	FG -M81	FG -M82	FG -M83	FG -M84	FG -M85
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
% Solids	80.1	84.1	84.6	84.5	79.3
Location	SD03	SD04	SD05	SD06	SD07
bis(2-Ethylhexyl)phthalate	430 U	390 U	390 U	390 U	410 U
Di-n-octylphthalate	430 U	390 U	390 U	390 U	410 U
Benzo(b)fluoranthene	430 U	390 U	390 U	390 U	410 U
Benzo(k)fluoranthene	430 U	390 U	390 U	390 U	410 U
Benzo(a)pyrene	430 U	390 U	390 U	390 U	410 U
Indeno(1,2,3-cd)pyrene	430 U	390 U	390 U	390 U	410 U
Dibenzo(a,h)anthracene	430 U	390 U	390 U	390 U	410 U
Benzo(g,h,i)perylene	430 U	390 U	390 U	390 U	410 U

U - NOT DETECTED

L - CONCENTRATION BETWEEN IDL & CRDL

UC - RAISED DETECTION LIMIT

J - ESTIMATED VALUE

^ - HIGH BIAS v - LOW BIAS

BACKGROUND SAMPLE HIGHLIGHTED

R - UNUSABLE

# CHEMICAL DATA SUMMARIES

## PESTICIDE AND PCB COMPOUNDS

Case No.: 28507

Units: UG/KG

Traffic Number	FG -M63	FG -M64	FG -M65	FG -M66	FG -M67	FG -M68
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
% Solids	84.6	75.5	85.5	79	84.7	85
Location	SS01	SS02	SS03	SS04	SS05	SS06
alpha-BHC	0.52 LJ	4.0 J	2.0 U	2.2 U	2.0 U	2.0 U
beta-BHC	6.5 J	24 J	0.26 LJ	2.2 U	0.21 LJ	2.0 U
delta-BHC	2.0 U	2.2 U	2.0 U	0.57 LJB	2.0 U	2.0 U
gamma-BHC (Lindane)	2.0 U	2.2 U	2.0 U	2.2 U	2.0 U	2.0 U
Heptachlor	3.5 J	2.2 U	2.0 U	2.2 U	2.0 U	2.0 U
Aldrin	0.56 LJ	6.1 J	2.0 U	2.2 U	2.0 U	2.0 U
Heptachlor epoxide	0.69 LJ	2.2 U	2.0 U	0.25 LJ	2.0 U	2.0 U
Endosulfan I	1.2 LJ	18 J	2.0 U	2.2 U	2.0 U	2.0 U
Dieldrin	0.46 LJ	5.0 J	3.8 U	0.65 LJB	3.9 U	4.0 U
4,4'-DDE	24	27 J	28 J	4.7	34 J	45
Endrin	3.8 U	4.2 U	3.8 U	4.2 U	3.9 U	4.8 UM
Endosulfan II	3.3 LJ	15 J	3.8 U	4.2 U	3.9 U	11 UM
4,4'-DDD	8.6	18 J	9.8	1.7 LJ	6.7 J^	12 UM
Endosulfan sulfate	5.7 J	20	3.8 U	0.71 LJ	3.9 U	5.8 UM
4,4'-DDT	44 J	53 J	50	9.5	61 *	85 *
Methoxychlor	4.5 LJ	18 LJ	20 U	22 U	20 U	20 U
Endrin ketone	2.7 LJ	5.8	3.8 U	0.66 LJB	3.9 U	4.0 U
Endrin aldehyde	1.7 LJ	16 J	3.8 U	1.4 LJ	3.9 U	12 UM
alpha-Chlordane	2.0 U	2.2 U	2.0 U	0.33 LJ	2.0 U	2.0 U
gamma-Chlordane	1.7 LJ	16 J	2.0 U	1.1 LJB	2.0 U	2.0 U
Toxaphene	200 U	220 U	130 LJE	220 U	140 LJ	600 J^
Aroclor-1016	38 U	42 U	38 U	42 U	39 U	39 U
Aroclor-1221	78 U	86 U	77 U	85 U	79 U	79 U
Aroclor-1232	38 U	42 U	38 U	42 U	39 U	39 U
Aroclor-1242	38 U	42 U	38 U	42 U	39 U	39 U
Aroclor-1248	38 U	42 U	38 U	42 U	39 U	39 U
Aroclor-1254	38 U	42 U	38 U	42 U	39 U	39 U
Aroclor-1260	38 U	42 U	38 U	42 U	39 U	39 U

U - NOT DETECTED    L - CONCENTRATION BETWEEN IDL & CRDL    UC - RAISED DETECTION LIMIT

J - ESTIMATED VALUE    ^ - HIGH BIAS    v - LOW BIAS

BACKGROUND SAMPLE HIGHLIGHTED

R - UNUSABLE

# CHEMICAL DATA SUMMARIES

## PESTICIDE AND PCB COMPOUNDS

Case No.: 28507

Units: MG/KG

Traffic Number	FG -M69	FG -M70	FG -M71	FG -M72	FG -M73	FG -M74
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
% Solids	89.5	91.3	82.8	91.7	91.6	80.9
Location	SS07	SB01	SB02	SB03	SB04	SB05
alpha-BHC	1.9 U	1.9 U	2.0 U	1.9 U	1.8 U	2.0 U
beta-BHC	1.9 U	1.9 U	2.0 U	1.9 U	1.8 U	2.0 U
delta-BHC	1.9 U	0.20 LJ	0.69 LJB	0.47 LJB	0.46 LJB	2.0 U
gamma-BHC (Lindane)	1.9 U	1.9 U	2.0 U	1.9 U	1.8 U	2.0 U
Heptachlor	1.9 U	0.10 LJ	2.0 U	1.9 U	1.8 U	2.0 U
Aldrin	0.33 LJ	1.9 U	2.0 U	1.9 U	1.8 U	2.0 U
Heptachlor epoxide	1.9 U	1.9 U	2.0 U	1.9 U	1.8 U	2.0 U
Endosulfan I	1.9 U	1.9 U	2.0 U	1.9 U	1.8 U	2.0 U
Dieldrin	3.8 U	3.6 U	0.58 LJE	3.6 U	3.6 U	4.0 U
4,4'-DDE	110 *	0.18 LJ	0.82 LJ	24	52 *	2.1 LJ
Endrin	5.0 UM	3.6 U	3.8 U	3.6 U	3.6 U	4.0 U
Endosulfan II	28 UM	3.6 U	3.8 U	3.6 U	3.6 U	4.0 U
4,4'-DDD	16 UM	0.33 LJ	3.8 U	3.6 U	3.6 U	1.4 LJB
Endosulfan sulfate	16 UM	3.6 U	0.74 LJ	3.6 U	3.6 U	4.0 U
4,4'-DDT	270 *	3.6 U	3.1 LJE	42	110 *	3.5 LJB
Methoxychlor	51 UM	0.72 LJ	20 U	19 U	18 U	13 LJ
Endrin ketone	8.9 UM	3.6 U	3.8 U	3.6 U	3.6 U	4.0 U
Endrin aldehyde	44 UM	3.6 U	0.94 LJ	3.6 U	3.6 U	0.86 LJ
alpha-Chlordane	1.9 U	0.10 LJ	0.35 LJ	1.9 U	1.8 U	0.29 LJ
gamma-Chlordane	1.9 U	0.71 LJ	0.73 LJE	1.9 U	1.8 U	2.0 U
Toxaphene	2100 J	190 U	200 U	88 LJ	260	200 U
Aroclor-1016	37 U	36 U	38 U	36 U	36 U	40 U
Aroclor-1221	74 U	74 U	78 U	74 U	73 U	81 U
Aroclor-1232	37 U	36 U	38 U	36 U	36 U	40 U
Aroclor-1242	37 U	36 U	38 U	36 U	36 U	40 U
Aroclor-1248	37 U	36 U	38 U	36 U	36 U	40 U
Aroclor-1254	37 U	36 U	38 U	36 U	36 U	40 U
Aroclor-1260	37 U	36 U	38 U	36 U	36 U	40 U

U - NOT DETECTED    L - CONCENTRATION BETWEEN IDL & CRDL    UC - RAISED DETECTION LIMIT

J - ESTIMATED VALUE    ^ - HIGH BIAS    v - LOW BIAS

BACKGROUND SAMPLE HIGHLIGHTED

R - UNUSABLE

# CHEMICAL DATA SUMMARIES

## PESTICIDE AND PCB COMPOUNDS

Case No.: 28507

Units: MG/KG

Traffic Number	FG -M75	FG -M76	FG -M77	FG -M78	FG -M79	FG -M80
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
% Solids	92.2	88	88	94.2	69.1	80.4
Location	SB06	SB07	SB08	SB09	SD01	SD02
alpha-BHC	1.9 U	1.9 U	1.9 U	1.8 U	0.41 LJ	2.1 U
beta-BHC	1.9 U	1.9 U	1.9 U	0.78 LJ	0.50 LJ	2.1 U
delta-BHC	1.9 U	1.9 U	1.9 U	1.8 U	1.1 LJB	2.1 U
gamma-BHC (Lindane)	1.9 U	1.9 U	1.9 U	1.8 U	2.5 U	2.1 U
Heptachlor	1.9 U	1.9 U	1.9 U	1.8 U	2.5 U	2.1 U
Aldrin	1.9 U	1.9 U	1.9 U	1.8 U	0.26 LJ	2.1 U
Heptachlor epoxide	1.9 U	1.9 U	1.9 U	1.8 U	0.45 LJ	2.1 U
Endosulfan I	1.9 U	1.9 U	1.9 U	1.8 U	1.1 LJ	2.1 U
Dieldrin	3.8 U	3.8 U	3.8 U	3.5 U	0.93 LJ	4.1 U
4,4'-DDE	13	3.4 LJ	4.3	140 *	40	18
Endrin	3.8 U	3.8 U	3.8 U	3.5 U	4.0 LJ	4.1 U
Endosulfan II	3.8 U	3.8 U	3.8 U	3.5 U	3.2 LJ	4.1 U
4,4'-DDD	3.8 U	3.8 U	3.8 U	3.5 U	6.1	6.2 J^
Endosulfan sulfate	3.8 U	3.8 U	3.8 U	3.5 U	1.0 LJ	4.1 U
4,4'-DDT	29	7.0 J	11	470 *	60	7.3 J
Methoxychlor	19 U	19 U	19 U	18 U	4.0 LJ	21 U
Endrin ketone	3.8 U	3.8 U	3.8 U	3.5 U	1.1 LJ	4.1 U
Endrin aldehyde	3.8 U	3.8 U	3.8 U	3.5 U	4.1 LJ	4.1 U
alpha-Chlordane	1.9 U	1.9 U	1.9 U	1.8 U	0.79 LJ	2.1 U
gamma-Chlordane	1.9 U	1.9 U	1.9 U	1.8 U	0.73 LJ	2.1 U
Toxaphene	52 LJ	63 LJ	46 LJ	1400 J	250 U	48 LJ
Aroclor-1016	38 U	38 U	38 U	35 U	49 U	41 U
Aroclor-1221	76 U	76 U	76 U	71 U	99 U	84 U
Aroclor-1232	38 U	38 U	38 U	35 U	49 U	41 U
Aroclor-1242	38 U	38 U	38 U	35 U	49 U	41 U
Aroclor-1248	38 U	38 U	38 U	35 U	49 U	41 U
Aroclor-1254	38 U	38 U	38 U	35 U	49 U	41 U
Aroclor-1260	38 U	38 U	38 U	35 U	49 U	41 U

U - NOT DETECTED    L - CONCENTRATION BETWEEN IDL & CRDL    UC - RAISED DETECTION LIMIT

J - ESTIMATED VALUE    ^ - HIGH BIAS    v - LOW BIAS

BACKGROUND SAMPLE HIGHLIGHTED

R - UNUSABLE



# CHEMICAL DATA SUMMARIES

## PESTICIDE AND PCB COMPOUNDS

Case No.: 28507

Units: MG/KG

Traffic Number	FG -M81	FG -M82	FG -M83	FG -M84	FG -M85
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
% Solids	80.1	84.1	84.6	84.5	79.3
Location	SD03	SD04	SD05	SD06	SD07
alpha-BHC	2.2 U	2.0 U	2.0 U	2.0 U	2.1 U
beta-BHC	2.2 U	2.0 U	2.0 U	2.0 U	2.1 U
delta-BHC	2.2 U	2.0 U	2.0 U	2.0 U	2.1 U
gamma-BHC (Lindane)	2.2 U	2.0 U	2.0 U	2.0 U	2.1 U
Heptachlor	2.2 U	2.0 U	2.0 U	2.0 U	2.1 U
Aldrin	2.2 U	2.0 U	2.0 U	2.0 U	2.1 U
Heptachlor epoxide	2.2 U	2.0 U	2.0 U	2.0 U	2.1 U
Endosulfan I	2.2 U	2.0 U	2.0 U	2.0 U	2.1 U
Dieldrin	4.3 U	3.9 U	3.9 U	3.9 U	4.1 U
4,4'-DDE	4.3 U	3.9 U	4.9	4.8 J	4.1 U
Endrin	4.3 U	3.9 U	3.9 U	3.9 U	4.1 U
Endosulfan II	4.3 U	3.9 U	3.9 U	3.9 U	4.1 U
4,4'-DDD	4.3 U	3.9 U	3.9 U	3.9 U	4.1 U
Endosulfan sulfate	0.47 LJ	3.9 U	3.9 U	3.9 U	4.1 U
4,4'-DDT	4.3 U	18 J	5.6 J	9.9 JB	4.1 U
Methoxychlor	5.9 LJ	20 U	20 U	20 U	21 U
Endrin ketone	4.3 U	3.9 U	3.9 U	3.9 U	4.1 U
Endrin aldehyde	0.44 LJ	3.9 U	3.9 U	3.9 U	4.1 U
alpha-Chlordane	2.2 U	2.0 U	2.0 U	2.0 U	2.1 U
gamma-Chlordane	2.2 U	2.0 U	2.0 U	2.0 U	2.1 U
Toxaphene	220 U	480	62 LJ	220 J	210 U
Aroclor-1016	43 U	39 U	39 U	39 U	41 U
Aroclor-1221	87 U	80 U	79 U	80 U	84 U
Aroclor-1232	43 U	39 U	39 U	39 U	41 U
Aroclor-1242	43 U	39 U	39 U	39 U	41 U
Aroclor-1248	43 U	39 U	39 U	39 U	41 U
Aroclor-1254	43 U	39 U	39 U	39 U	41 U
Aroclor-1260	43 U	39 U	39 U	39 U	41 U

U - NOT DETECTED    L - CONCENTRATION BETWEEN IDL & CRDL    UC - RAISED DETECTION LIMIT

J - ESTIMATED VALUE    ^ - HIGH BIAS    v - LOW BIAS

BACKGROUND SAMPLE HIGHLIGHTED

R - UNUSABLE



# CHEMICAL DATA SUMMARIES

## INORGANIC COMPOUNDS

Case No.: 28507

Units: MG/KG

Traffic Number	MFJ -W63	MFJ-W64	MFJ-W65	MFJ-W66	MFJ-W67	MFJ-W68
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
% Solids	84.6	75.5	85.5	79	84.7	85
Location	SS01	SS02	SS03	SS04	SS05	SS06
Aluminum	4190	5130	6540	7530	4450	5770
Antimony	0.91 LUC	1.1 LUC	0.46 U Jv	0.55 LUCJv	0.46 U Jv	0.72 LUCJv
Arsenic	7.2	5.8	8.4	8.4	6.3	6.8
Barium	99.5	109	122	102	90.1	104
Beryllium	0.30 L	0.30 L	0.42 L	0.44 L	0.31 L	0.34 L
Cadmium	0.26 L	0.28 L	0.23 U	0.25 U	0.23 U	0.23 U
Calcium	20700	17700	6430	14300	7550	9230
Chromium	6.4 J^	8.3 J^	9.0	9.8	6.7 J^	8.1 J^
Cobalt	4.5 L	6.7 L	6.3 L	7.4 L	4.7 L	5.4 L
Copper	14.6	17.5	12.3	13.6	8.1	9.2
Iron	9230	12900	13200	16000	8500	9830
Lead	6.8	6.5	8.3	7.5	6.9	6.8
Magnesium	8140	10100	4460	7530	3810	4590
Manganese	639	626	565	442	469	518
Mercury	0.08 L	0.08 L	0.08 L	0.11 L	0.07 L	0.08 L
Nickel	9.3	12.0	12.3	12.2	8.7 L	10.7
Potassium	747 L	1110 L	974 L	1040 L	717 L	939 L
Selenium	0.46 U	0.51 U	0.46 U	0.49 U	0.46 U	0.47 U
Silver	0.23 U	0.25 U	0.23 U	0.25 U	0.23 U	0.23 U
Sodium	178 LJ'	230 LJ^	218 LJ^	294 LJ^	189 LJ^	278 LJ^
Thallium	0.69 U	0.76 U	0.69 U	0.74 U	0.69 U	0.70 U
Vanadium	11.7	14.1	17.1	20.6	12.2	14.6
Zinc	55.5 Jv	72.9 Jv	53.9 Jv	67.8 Jv	38.7 Jv	52.7 Jv

U - NOT DETECTED

L - CONCENTRATION BETWEEN IDL & CRDL

UC - RAISED DETECTION LIMIT

J - ESTIMATED VALUE

^ - HIGH BIAS

v - LOW BIAS

BACKGROUND SAMPLE HIGHLIGHTED

R - UNUSABLE

# CHEMICAL DATA SUMMARIES

## INORGANIC COMPOUNDS

Case No.: 28507  
Units: MG/KG

Traffic Number	MFJ-W69	MFJ-W70	MFJ-W71	MFJ-W72	MFJ-W73	MFJ-W74
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
% Solids	89.5	91.3	82.8	91.7	91.6	80.9
Location	SS07	SB01	SB02	SB03	SB04	SB05
Aluminum	3960	5530	5490	6030	7530	7370
Antimony	0.65 U J	0.64 U Jv	0.69 U Jv	0.64 U Jv	0.63 U Jv	0.71 U Jv
Arsenic	12.0	4.5	5.2	6.5	6.7	5.9
Barium	74.1	115	116	123	142	263
Beryllium	0.26 L	0.42 L	0.36 L	0.43 LUC	0.45 LUC	0.50 LUC
Cadmium	0.22 U	0.21 U	0.23 U	0.21 U	0.21 U	0.57 L
Calcium	739 LJ	1720 Jv	1550 Jv	1460 Jv	1600 Jv	1730 Jv
Chromium	6.0	7.6	7.5	7.9	9.3	9.5
Cobalt	4.8 L	6.3 L	6.3 L	7.3 L	7.3 L	7.4 L
Copper	8.0	8.7	14.1	10.2	11.1	11.7
Iron	7520	9880	10100	11500	12500	12300
Lead	9.8	6.5	6.8	8.6	9.0	14.3
Magnesium	1020 L	1620	1580	1580	1780	1690
Manganese	352	541	493	518	653	898
Mercury	0.08 LU	0.07 LUC	0.09 LUC	0.09 LUC	0.08 LUC	0.09 LUC
Nickel	7.3 L	11.6	11.1	12.0	14.4	15.9
Potassium	1020 L	573 L	575 L	632 L	723 L	685 L
Selenium	0.87 U	0.86 U	0.92 U	0.85 U	0.84 U	0.94 U
Silver	0.65 U	0.64 U	0.69 U	0.64 U	0.63 U	0.71 U
Sodium	209 LJ	294 LJ	232 LJ	220 LJ	236 LJ	257 LJ
Thallium	1.3 U	1.3 U	1.4 U	1.3 U	1.3 L	1.4 U
Vanadium	10.5 L	13.3	14.0	15.6	17.5	16.9
Zinc	43.3 Jv	40.8 Jv	39.6 Jv	42.1 Jv	44.2 Jv	51.2 Jv

U - NOT DETECTED

L - CONCENTRATION BETWEEN IDL & CRDL

UC - RAISED DETECTION LIMIT

J - ESTIMATED VALUE

^ - HIGH BIAS

v - LOW BIAS

R - UNUSABLE

BACKGROUND SAMPLE HIGHLIGHTED

# CHEMICAL DATA SUMMARIES

## INORGANIC COMPOUNDS

Case No.: 28507

Units: MG/KG

Traffic Number	MFJ-W75	MFJ-W76	MFJ-W77	MFJ-W78	MFJ-W79	MFJ-W80
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
% Solids	92.2	88	88	94.2	69.1	80.4
Location	SB06	SB07	SB08	SB09	SD01	SD02
Aluminum	6200	7440	6940	4970	4720	9660
Antimony	0.64 U J	0.67 U Jv	0.66 U Jv	0.61 U Jv	0.83 U Jv	0.72 LUCJv
Arsenic	3.4	6.4	6.0	6.6	8.2	9.6
Barium	264	161	152	106	121	300
Beryllium	0.43 LUC	0.48 LUC	0.46 LUC	0.35 LUC	0.42 L	0.65 L
Cadmium	0.21 U	0.22 U	0.22 U	0.20 U	0.28 U	0.36 L
Calcium	1010 LJ	1750 Jv	1760 Jv	842 LJv	19500 Jv	2660 Jv
Chromium	7.6	9.4	9.0	6.9	7.9	12.0
Cobalt	4.9 L	8.1 L	7.8 L	5.6 L	8.3 L	10.8 L
Copper	8.6	11.2	10.8	8.5	13.6	13.5
Iron	8070	13200	12800	9020	11100	17800
Lead	6.0	9.2	9.2	8.1	13.0	12.0
Magnesium	911 L	1850	1800	1240	4570	1960
Manganese	775	773	657	500	1010	1730
Mercury	0.09 LU	0.08 LUC	0.09 LUC	0.08 LUC	0.10 LUC	0.10 L
Nickel	11.1	14.7	13.9	10.2	9.8 L	17.4
Potassium	436 L	656 L	654 L	860 L	564 L	848 L
Selenium	0.85 U	0.89 U	0.88 U	0.81 U	1.1 U	0.48 U
Silver	0.64 U	0.67 U	0.66 U	0.61 U	0.83 U	0.24 U
Sodium	193 LJ	246 LJ	230 LJ	173 LJ	315 LJ	224 LJv
Thallium	1.3 U	1.3 U	1.3 U J	1.4 L	1.7 L	0.72 U
Vanadium	12.7	18.1	17.7	12.7	15.5	26.3
Zinc	33.6 Jv	43.5 Jv	45.5 Jv	36.0 Jv	106 Jv	58.1 Jv

U - NOT DETECTED

L - CONCENTRATION BETWEEN IDL & CRDL

UC - RAISED DETECTION LIMIT

J - ESTIMATED VALUE

^ - HIGH BIAS

v - LOW BIAS

R - UNUSABLE

BACKGROUND SAMPLE HIGHLIGHTED



# CHEMICAL DATA SUMMARIES

## INORGANIC COMPOUNDS

Case No.: 28507

Units: MG/KG

Traffic Number	MFJ-W81	MFJ-W82	MFJ-W83	MFJ-W84	MFJ-W85
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
% Solids	80.1	84.1	84.6	84.5	79.3
Location	SD03	SD04	SD05	SD06	SD07
Aluminum	14300	11200	6920	7490	9160
Antimony	0.64 LUC	1.4 LUC	1.7 LUC <sup>J</sup>	1.6 LUC <sup>Jv</sup>	1.3 LUC <sup>Jv</sup>
Arsenic	7.8	34.6	31.2	35.1	8.4
Barium	161	859	781	447	165
Beryllium	0.62 L	1.8	1.6	1.6	0.46 L
Cadmium	0.30 L	1.1 L	1.6	0.96 L	0.78 L
Calcium	2310 Jv	7470 Jv	4490 Jv	2410 Jv	2800 Jv
Chromium	15.0	25.7	14.7	18.5	10.4
Cobalt	7.7 L	45.3	52.7	34.6	8.0 L
Copper	13.5	25.4	25.1	19.4	17.0
Iron	18600	46400	42300	41300	17800
Lead	6.5	38.4	41.3	35.8	13.1
Magnesium	2230	2430	1750	1550	2670
Manganese	814	6240	7050	4690	911
Mercury	0.09 L	0.08 L	0.08 L	0.08 L	0.09 L
Nickel	19.4	51.8	69.7	37.6	18.5
Potassium	776 L	755 L	526 L	487 L	932 L
Selenium	0.48 U	0.46 U	0.45 U	0.46 U	0.50 U
Silver	0.24 U	0.23 U	0.23 U	0.23 U	0.25 U
Sodium	300 L <sup>J</sup>	246 L <sup>Jv</sup>	270 L <sup>Jv</sup>	216 L <sup>Jv</sup>	259 L <sup>Jv</sup>
Thallium	0.71 U	1.8 L <sup>Jv</sup>	1.4 L	1.6 L	0.75 U
Vanadium	24.0	73.2	57.2	64.3	21.1
Zinc	56.5 Jv	120 Jv	114 Jv	93.9 Jv	65.4 Jv

U - NOT DETECTED

L - CONCENTRATION BETWEEN IDL & CRDL

UC - RAISED DETECTION LIMIT

J - ESTIMATED VALUE

<sup>^</sup> - HIGH BIAS

v - LOW BIAS

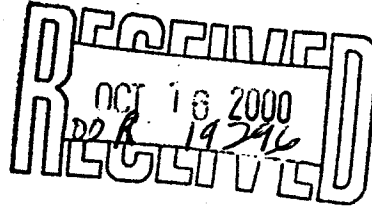
R - UNUSABLE

BACKGROUND SAMPLE HIGHLIGHTED



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
HOUSTON BRANCH  
10625 FALLSTONE RD.  
HOUSTON, TEXAS 77099



MEMORANDUM

Date: October 12, 2000

Subject: Contract Laboratory Program Data Review

From: *Marvelyn Humphrey*  
Marvelyn Humphrey, Alternate ESAT RPO, 6MD-HC

To: B. Rhotenberry, 6SF-RA

Site : BPS, INC.

Case#: 28507

SDG# : FGM68

The EPA Region 6 Houston Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package is acceptable for regional use. Problems, if any, are listed in the report narrative.

If you have any questions regarding the data review report, please call me at (281) 983-2140.

Attachments

cc: R. Flores, Region 6 CLP/TPO  
M. El-Feky, Region 6 Data Coordinator  
Files (2)

**LOCKHEED MARTIN SERVICES GROUP  
ESAT REGION VI  
10101 SOUTHWEST FREEWAY, SUITE 500  
HOUSTON, TX 77074**

**MEMORANDUM**

**DATE:** October 11, 2000

**TO:** Melvin Ritter/Marvelyn Humphrey, ESAT RPO/Alternate RPO, Region VI

**FROM:** Tom C.H. Chiang, *Tom C.H. Chiang* ESAT Team Manager, Region VI

**SUBJECT:** CLP Data Review

**REF:** TDF # 6-1007A                      ESAT # O-2266  
ESAT Contract No. 68-D6-0005

Attached is the data review summary for Case # 28507  
SDG # FGM68  
Site BPS, Inc.

**COMMENTS:**

**I. CONTRACTUAL ASSESSMENT OF THE DATA PACKAGE**

CCS audit determined that the data package is contractually compliant. The hardcopy review found the contractually noncompliant item below that CCS is not expected to detect.

The data package arrived 3 working days late for the 14-day contractual turnaround time.

**II. TECHNICAL USABILITY ASSESSMENT OF THE DATA PACKAGE**

The total number of results reviewed was 279 for this data package. Some results were qualified because of technical problems. The significant technical problems are summarized below.

- A. Coeluting toxaphene peaks interfered with the identification of many pesticides for samples FG-M68 and FG-M69.
- B. The field duplicate samples have inconsistent toxaphene concentrations.

**III. OTHER AREAS OF CONCERN**

No temperature blank was present in the cooler used to ship the samples of this SDG.

## U.S. EPA - CLP

## COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

1

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW69

SOW No.: ILM04.01

9/29/00

EPA Sample No.	Lab Sample ID
MFJW69	44309.09
MFJW69D	44309.10D
MFJW69S	44309.11S
MFJW70	44309.12
MFJW71	44309.13
MFJW72	44309.14
MFJW73	44309.15
MFJW74	44309.16
MFJW75	44309.17
MFJW76	44309.18
MFJW77	44309.19
MFJW78	44309.20
MFJW79	44309.21
MFJW80	44309.22
MFJW81	44309.23
MFJW82	44309.24
MFJW83	44309.25
MFJW84	44309.26
MFJW85	44309.27

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Steve L. Markham

Name: Steve L. Markham

Date: Sept. 29, 2000

Title: Operations Manager

COVER PAGE - IN

ILM04.1

# **AMERICAN ANALYTICAL & TECHNICAL SERVICES, INC**

1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

2

## **SDG NARRATIVE**

**CONTRACT: 68W00086**

**DATE: 09/29/00**

**CASE: 28507**

**SOW NO.: ILM04.1**

**SDG: MFJW69**

**EPISODE NO.: 44309**

### **INORGANIC METAL FRACTION:**

Seventeen soil samples were submitted for ICP, CN and Hg analysis. No major problems occurred during the digestion or analyses of these samples. The cooler temperatures at time of receipt were at 11.2° Celsius. The cooler temperature indicator bottles were present. The lab uses a mixture of ICV-1, ICV-2, ICV-3 and ICV-4 for the ICP Initial Calibration Verification analysis. In order to obtain results for sodium and potassium within the calibration range of the TRACE ICP's, the ICV-1 reference solutions is prepared at twice the dilution suggested for the ICV-1 preparation. The sample's analyses were completed according to the following:

**SWL SOP #**

SWL-IN-202

**Method SOP is based**

ILM03.0/04.0 (analysis of Hg by cold vapor)

**Initial and Continuing Calibration Checks:** No problems

**Initial and Continuing Calibration Blanks:** The following elements showed low level concentrations below the Contract Required Detection Limit in the Calibration Blank: Al, Sb, Be, Ca, Fe, Zn  
No action required.

**Linearity near the CRDL (CRA & CRI):** The CRI standard was outside of our in house warning limits of 70-130%R for the following elements: Se  
No action required.

**Preparation Blank:** The following elements showed low level concentrations below the Contract Required Detection Limit in the Preparation Blank: Al, Ca, Cr, Fe, Hg, Ni, Zn  
No action required.

**Lab Control Spikes:** No problems.

**Matrix Spikes:** The following elements were outside the control limits of 75-125% recovery: Sb, S, Ag  
All associated samples were flagged with a "N" on Form I's. No action required.

**Duplicate(s):** The following elements were outside the control limits of 0-20% RPD: none  
All associated samples were flagged with a "\*" on Form I's. No action required.



**AMERICAN ANALYTICAL & TECHNICAL SERVICES, INC**

1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

**Serial Dilution (ICP):** The soil serial dilution was outside the control limits of 10% for the following elements: Ca, Na, Zn

All associated samples were flagged with an "E" on Form I's. No action required.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve L. Markham", with a stylized flourish at the end.

Steve Markham  
Operations Manager

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW69

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW69

Matrix (soil/water): SOIL Lab Sample ID: 44309.09

Level (low/med): LOW Date Received: 09/13/00

% Solids: 89.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3960	—	—	P
7440-36-0	Antimony	0.65	U	N	P
7440-38-2	Arsenic	12.0	—	—	P
7440-39-3	Barium	74.1	—	—	P
7440-41-7	Beryllium	0.26	B	—	P
7440-43-9	Cadmium	0.22	U	—	P
7440-70-2	Calcium	739	B	E	P
7440-47-3	Chromium	6.0	—	—	P
7440-48-4	Cobalt	4.8	B	—	P
7440-50-8	Copper	8.0	—	—	P
7439-89-6	Iron	7520	—	—	P
7439-92-1	Lead	9.8	—	—	P
7439-95-4	Magnesium	1020	B	—	P
7439-96-5	Manganese	352	—	—	P
7439-97-6	Mercury	0.08	B	—	CV
7440-02-0	Nickel	7.3	B	—	P
7440-09-7	Potassium	1020	B	—	P
7782-49-2	Selenium	0.87	U	N	P
7440-22-4	Silver	0.65	U	N	P
7440-23-5	Sodium	209	B	E	P
7440-28-0	Thallium	1.3	U	—	P
7440-62-2	Vanadium	10.5	B	—	P
7440-66-6	Zinc	43.3	—	E	P
			—	—	—

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW70

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW69

Matrix (soil/water): SOIL Lab Sample ID: 44309.12

Level (low/med): LOW Date Received: 09/13/00

% Solids: 91.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5530	—	—	P
7440-36-0	Antimony	0.64	U	N	P
7440-38-2	Arsenic	4.5	—	—	P
7440-39-3	Barium	115	—	—	P
7440-41-7	Beryllium	0.42	B	—	P
7440-43-9	Cadmium	0.21	U	—	P
7440-70-2	Calcium	1720	—	E	P
7440-47-3	Chromium	7.6	—	—	P
7440-48-4	Cobalt	6.3	B	—	P
7440-50-8	Copper	8.7	—	—	P
7439-89-6	Iron	9880	—	—	P
7439-92-1	Lead	6.5	—	—	P
7439-95-4	Magnesium	1620	—	—	P
7439-96-5	Manganese	541	—	—	P
7439-97-6	Mercury	0.07	B	—	CV
7440-02-0	Nickel	11.6	—	—	P
7440-09-7	Potassium	573	B	—	P
7782-49-2	Selenium	0.86	U	N	P
7440-22-4	Silver	0.64	U	N	P
7440-23-5	Sodium	294	B	E	P
7440-28-0	Thallium	1.3	U	—	P
7440-62-2	Vanadium	13.3	—	—	P
7440-66-6	Zinc	40.8	—	E	P
—	—	—	—	—	—
—	—	—	—	—	—

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW71

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086\_

Lab Code: AATS\_ Case No.: 28507\_ SAS No.: \_ SDG No.: MFJW69

Matrix (soil/water): SOIL\_ Lab Sample ID: 44309.13

Level (low/med): LOW\_ Date Received: 09/13/00

% Solids: \_82.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5490	-		P
7440-36-0	Antimony	0.69	U	N	P
7440-38-2	Arsenic	5.2	-		P
7440-39-3	Barium	116	-		P
7440-41-7	Beryllium	0.36	B		P
7440-43-9	Cadmium	0.23	U		P
7440-70-2	Calcium	1550	-	E	P
7440-47-3	Chromium	7.5	-		P
7440-48-4	Cobalt	6.3	B		P
7440-50-8	Copper	14.1	-		P
7439-89-6	Iron	10100	-		P
7439-92-1	Lead	6.8	-		P
7439-95-4	Magnesium	1580	-		P
7439-96-5	Manganese	493	-		P
7439-97-6	Mercury	0.09	B		CV
7440-02-0	Nickel	11.1	-		P
7440-09-7	Potassium	575	B		P
7782-49-2	Selenium	0.92	U	N	P
7440-22-4	Silver	0.69	U	N	P
7440-23-5	Sodium	232	B	E	P
7440-28-0	Thallium	1.4	U		P
7440-62-2	Vanadium	14.0	-		P
7440-66-6	Zinc	39.6	-	E	P

Color Before: BROWN\_

Clarity Before: \_

Texture: MEDIUM

Color After: COLORLESS

Clarity After: CLEAR\_

Artifacts: \_

Comments:

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW72

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW69

Matrix (soil/water): SOIL Lab Sample ID: 44309.14

Level (low/med): LOW Date Received: 09/13/00

% Solids: 91.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6030	-		P
7440-36-0	Antimony	0.64	U	N	P
7440-38-2	Arsenic	6.5	-		P
7440-39-3	Barium	123	-		P
7440-41-7	Beryllium	0.43	B		P
7440-43-9	Cadmium	0.21	U		P
7440-70-2	Calcium	1460	-	E	P
7440-47-3	Chromium	7.9	-		P
7440-48-4	Cobalt	7.3	B		P
7440-50-8	Copper	10.2	-		P
7439-89-6	Iron	11500	-		P
7439-92-1	Lead	8.6	-		P
7439-95-4	Magnesium	1580	-		P
7439-96-5	Manganese	518	-		P
7439-97-6	Mercury	0.09	B		CV
7440-02-0	Nickel	12.0	-		P
7440-09-7	Potassium	632	B		P
7782-49-2	Selenium	0.85	U	N	P
7440-22-4	Silver	0.64	U	N	P
7440-23-5	Sodium	220	B	E	P
7440-28-0	Thallium	1.3	U		P
7440-62-2	Vanadium	15.6	-		P
7440-66-6	Zinc	42.1	-	E	P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW73

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086\_\_

Lab Code: AATS\_\_ Case No.: 28507\_\_ SAS No.: \_\_\_\_\_ SDG No.: MFJW69

Matrix (soil/water): SOIL\_\_ Lab Sample ID: 44309.15

Level (low/med): LOW\_\_ Date Received: 09/13/00

% Solids: \_\_91.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7530	—	—	P
7440-36-0	Antimony	0.63	U	N	P
7440-38-2	Arsenic	6.7	—	—	P
7440-39-3	Barium	142	—	—	P
7440-41-7	Beryllium	0.45	B	—	P
7440-43-9	Cadmium	0.21	U	—	P
7440-70-2	Calcium	1600	—	E	P
7440-47-3	Chromium	9.3	—	—	P
7440-48-4	Cobalt	7.3	B	—	P
7440-50-8	Copper	11.1	—	—	P
7439-89-6	Iron	12500	—	—	P
7439-92-1	Lead	9.0	—	—	P
7439-95-4	Magnesium	1780	—	—	P
7439-96-5	Manganese	653	—	—	P
7439-97-6	Mercury	0.08	B	—	CV
7440-02-0	Nickel	14.4	—	—	P
7440-09-7	Potassium	723	B	—	P
7782-49-2	Selenium	0.84	U	N	P
7440-22-4	Silver	0.63	U	N	P
7440-23-5	Sodium	236	B	E	P
7440-28-0	Thallium	1.3	B	—	P
7440-62-2	Vanadium	17.5	—	—	P
7440-66-6	Zinc	44.2	—	E	P
—	—	—	—	—	—
—	—	—	—	—	—

Color Before: BROWN\_\_ Clarity Before: \_\_\_\_\_ Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR\_\_ Artifacts: \_\_\_\_\_

Comments:



1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW74

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086\_\_

Lab Code: AATS\_\_ Case No.: 28507\_\_ SAS No.: \_\_ SDG No.: MFJW69

Matrix (soil/water): SOIL\_\_ Lab Sample ID: 44309.16

Level (low/med): LOW\_\_ Date Received: 09/13/00

% Solids: \_\_80.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7370	—	—	P
7440-36-0	Antimony	0.71	U	N	P
7440-38-2	Arsenic	5.9	—	—	P
7440-39-3	Barium	263	—	—	P
7440-41-7	Beryllium	0.50	B	—	P
7440-43-9	Cadmium	0.57	B	—	P
7440-70-2	Calcium	1730	—	E	P
7440-47-3	Chromium	9.5	—	—	P
7440-48-4	Cobalt	7.4	B	—	P
7440-50-8	Copper	11.7	—	—	P
7439-89-6	Iron	12300	—	—	P
7439-92-1	Lead	14.3	—	—	P
7439-95-4	Magnesium	1690	—	—	P
7439-96-5	Manganese	898	—	—	P
7439-97-6	Mercury	0.09	B	—	CV
7440-02-0	Nickel	15.9	—	—	P
7440-09-7	Potassium	685	B	—	P
7782-49-2	Selenium	0.94	U	N	P
7440-22-4	Silver	0.71	U	N	P
7440-23-5	Sodium	257	B	E	P
7440-28-0	Thallium	1.4	U	—	P
7440-62-2	Vanadium	16.9	—	—	P
7440-66-6	Zinc	51.2	—	E	P

Color Before: BROWN\_\_ Clarity Before: \_\_ Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR\_\_ Artifacts: \_\_

Comments:

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW75

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW69

Matrix (soil/water): SOIL Lab Sample ID: 44309.17

Level (low/med): LOW Date Received: 09/13/00

% Solids: 92.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6200	-		P
7440-36-0	Antimony	0.64	U	N	P
7440-38-2	Arsenic	3.4	-		P
7440-39-3	Barium	264	-		P
7440-41-7	Beryllium	0.43	B		P
7440-43-9	Cadmium	0.21	U		P
7440-70-2	Calcium	1010	B	E	P
7440-47-3	Chromium	7.6	-		P
7440-48-4	Cobalt	4.9	B		P
7440-50-8	Copper	8.6	-		P
7439-89-6	Iron	8070	-		P
7439-92-1	Lead	6.0	-		P
7439-95-4	Magnesium	911	B		P
7439-96-5	Manganese	775	-		P
7439-97-6	Mercury	0.09	B		CV
7440-02-0	Nickel	11.1	-		P
7440-09-7	Potassium	436	B		P
7782-49-2	Selenium	0.85	U	N	P
7440-22-4	Silver	0.64	U	N	P
7440-23-5	Sodium	193	B	E	P
7440-28-0	Thallium	1.3	U		P
7440-62-2	Vanadium	12.7	-		P
7440-66-6	Zinc	33.6	-	E	P
			-		

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW76

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW69

Matrix (soil/water): SOIL Lab Sample ID: 44309.18

Level (low/med): LOW Date Received: 09/13/00

% Solids: 88.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7440	—	—	P
7440-36-0	Antimony	0.67	U	N	P
7440-38-2	Arsenic	6.4	—	—	P
7440-39-3	Barium	161	—	—	P
7440-41-7	Beryllium	0.48	B	—	P
7440-43-9	Cadmium	0.22	U	—	P
7440-70-2	Calcium	1750	—	E	P
7440-47-3	Chromium	9.4	—	—	P
7440-48-4	Cobalt	8.1	B	—	P
7440-50-8	Copper	11.2	—	—	P
7439-89-6	Iron	13200	—	—	P
7439-92-1	Lead	9.2	—	—	P
7439-95-4	Magnesium	1850	—	—	P
7439-96-5	Manganese	773	—	—	P
7439-97-6	Mercury	0.08	B	—	CV
7440-02-0	Nickel	14.7	—	—	P
7440-09-7	Potassium	656	B	—	P
7782-49-2	Selenium	0.89	U	N	P
7440-22-4	Silver	0.67	U	N	P
7440-23-5	Sodium	246	B	E	P
7440-28-0	Thallium	1.3	U	—	P
7440-62-2	Vanadium	18.1	—	—	P
7440-66-6	Zinc	43.5	—	E	P
			—	—	—
			—	—	—

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW77

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW69

Matrix (soil/water): SOIL

Lab Sample ID: 44309.19

Level (low/med): LOW

Date Received: 09/13/00

% Solids: 88.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6940	-		P
7440-36-0	Antimony	0.66	U	N	P
7440-38-2	Arsenic	6.0	-		P
7440-39-3	Barium	152	-		P
7440-41-7	Beryllium	0.46	B		P
7440-43-9	Cadmium	0.22	U		P
7440-70-2	Calcium	1760	-	E	P
7440-47-3	Chromium	9.0	-		P
7440-48-4	Cobalt	7.8	B		P
7440-50-8	Copper	10.8	-		P
7439-89-6	Iron	12800	-		P
7439-92-1	Lead	9.2	-		P
7439-95-4	Magnesium	1800	-		P
7439-96-5	Manganese	657	-		P
7439-97-6	Mercury	0.09	B		CV
7440-02-0	Nickel	13.9	-		P
7440-09-7	Potassium	654	B		P
7782-49-2	Selenium	0.88	U	N	P
7440-22-4	Silver	0.66	U	N	P
7440-23-5	Sodium	230	B	E	P
7440-28-0	Thallium	1.3	U		P
7440-62-2	Vanadium	17.7	-		P
7440-66-6	Zinc	45.5	-	E	P

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

## U.S. EPA - CLP

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW78

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW69

Matrix (soil/water): SOIL Lab Sample ID: 44309.20

Level (low/med): LOW Date Received: 09/13/00

% Solids: 94.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4970	-		P
7440-36-0	Antimony	0.61	U	N	P
7440-38-2	Arsenic	6.6	-		P
7440-39-3	Barium	106	-		P
7440-41-7	Beryllium	0.35	B		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	842	B	E	P
7440-47-3	Chromium	6.9	-		P
7440-48-4	Cobalt	5.6	B		P
7440-50-8	Copper	8.5	-		P
7439-89-6	Iron	9020	-		P
7439-92-1	Lead	8.1	-		P
7439-95-4	Magnesium	1240	-		P
7439-96-5	Manganese	500	-		P
7439-97-6	Mercury	0.08	B		CV
7440-02-0	Nickel	10.2	-		P
7440-09-7	Potassium	860	B		P
7782-49-2	Selenium	0.81	U	N	P
7440-22-4	Silver	0.61	U	N	P
7440-23-5	Sodium	173	B	E	P
7440-28-0	Thallium	1.4	B		P
7440-62-2	Vanadium	12.7	-		P
7440-66-6	Zinc	36.0	-	E	P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW79

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW69

Matrix (soil/water): SOIL Lab Sample ID: 44309.21

Level (low/med): LOW Date Received: 09/13/00

% Solids: 69.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4720	-		P
7440-36-0	Antimony	0.83	U	N	P
7440-38-2	Arsenic	8.2	-		P
7440-39-3	Barium	121	-		P
7440-41-7	Beryllium	0.42	B		P
7440-43-9	Cadmium	0.28	U		P
7440-70-2	Calcium	19500	-	E	P
7440-47-3	Chromium	7.9	-		P
7440-48-4	Cobalt	8.3	B		P
7440-50-8	Copper	13.6	-		P
7439-89-6	Iron	11100	-		P
7439-92-1	Lead	13.0	-		P
7439-95-4	Magnesium	4570	-		P
7439-96-5	Manganese	1010	-		P
7439-97-6	Mercury	0.10	B		CV
7440-02-0	Nickel	9.8	B		P
7440-09-7	Potassium	564	B		P
7782-49-2	Selenium	1.1	U	N	P
7440-22-4	Silver	0.83	U	N	P
7440-23-5	Sodium	315	B	E	P
7440-28-0	Thallium	1.7	B		P
7440-62-2	Vanadium	15.5	-		P
7440-66-6	Zinc	106	-	E	P
			-		
			-		

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

## U.S. EPA - CLP

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

14

MFJW80

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW69

Matrix (soil/water): SOIL Lab Sample ID: 44309.22

Level (low/med): LOW Date Received: 09/13/00

% Solids: 80.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9660	—	—	P
7440-36-0	Antimony	0.72	B	N	P
7440-38-2	Arsenic	9.6	—	—	P
7440-39-3	Barium	300	—	—	P
7440-41-7	Beryllium	0.65	B	—	P
7440-43-9	Cadmium	0.36	B	—	P
7440-70-2	Calcium	2660	—	E	P
7440-47-3	Chromium	12.0	—	—	P
7440-48-4	Cobalt	10.8	B	—	P
7440-50-8	Copper	13.5	—	—	P
7439-89-6	Iron	17800	—	—	P
7439-92-1	Lead	12.0	—	—	P
7439-95-4	Magnesium	1960	—	—	P
7439-96-5	Manganese	1730	—	—	P
7439-97-6	Mercury	0.10	B	—	CV
7440-02-0	Nickel	17.4	—	—	P
7440-09-7	Potassium	848	B	—	P
7782-49-2	Selenium	0.48	U	N	P
7440-22-4	Silver	0.24	U	N	P
7440-23-5	Sodium	224	B	E	P
7440-28-0	Thallium	0.72	U	—	P
7440-62-2	Vanadium	26.3	—	—	P
7440-66-6	Zinc	58.1	—	E	P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW81

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW69

Matrix (soil/water): SOIL Lab Sample ID: 44309.23

Level (low/med): LOW Date Received: 09/13/00

% Solids: 80.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14300	-		P
7440-36-0	Antimony	0.64	B	N	P
7440-38-2	Arsenic	7.8	-		P
7440-39-3	Barium	161	-		P
7440-41-7	Beryllium	0.62	B		P
7440-43-9	Cadmium	0.30	B		P
7440-70-2	Calcium	2310	-	E	P
7440-47-3	Chromium	15.0	-		P
7440-48-4	Cobalt	7.7	B		P
7440-50-8	Copper	13.5	-		P
7439-89-6	Iron	18600	-		P
7439-92-1	Lead	6.5	-		P
7439-95-4	Magnesium	2230	-		P
7439-96-5	Manganese	814	-		P
7439-97-6	Mercury	0.09	B		CV
7440-02-0	Nickel	19.4	-		P
7440-09-7	Potassium	776	B		P
7782-49-2	Selenium	0.48	U	N	P
7440-22-4	Silver	0.24	U	N	P
7440-23-5	Sodium	300	B	E	P
7440-28-0	Thallium	0.71	U		P
7440-62-2	Vanadium	24.0	-		P
7440-66-6	Zinc	56.5	-	E	P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW82

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW69

Matrix (soil/water): SOIL Lab Sample ID: 44309.24

Level (low/med): LOW Date Received: 09/13/00

% Solids: 84.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11200	-		P
7440-36-0	Antimony	1.4	B	N	P
7440-38-2	Arsenic	34.6	-		P
7440-39-3	Barium	859	-		P
7440-41-7	Beryllium	1.8	-		P
7440-43-9	Cadmium	1.1	B		P
7440-70-2	Calcium	7470	-	E	P
7440-47-3	Chromium	25.7	-		P
7440-48-4	Cobalt	45.3	-		P
7440-50-8	Copper	25.4	-		P
7439-89-6	Iron	46400	-		P
7439-92-1	Lead	38.4	-		P
7439-95-4	Magnesium	2430	-		P
7439-96-5	Manganese	6240	-		P
7439-97-6	Mercury	0.08	B		CV
7440-02-0	Nickel	51.8	-		P
7440-09-7	Potassium	755	B		P
7782-49-2	Selenium	0.46	U	N	P
7440-22-4	Silver	0.23	U	N	P
7440-23-5	Sodium	246	B	E	P
7440-28-0	Thallium	1.8	B		P
7440-62-2	Vanadium	73.2	-		P
7440-66-6	Zinc	120	-	E	P
			-		
			-		

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO. 17

MFJW83

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW69

Matrix (soil/water): SOIL Lab Sample ID: 44309.25

Level (low/med): LOW Date Received: 09/13/00

% Solids: 84.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6920	-		P
7440-36-0	Antimony	1.7	B	N	P
7440-38-2	Arsenic	31.2	-		P
7440-39-3	Barium	781	-		P
7440-41-7	Beryllium	1.6	-		P
7440-43-9	Cadmium	1.6	-		P
7440-70-2	Calcium	4490	-	E	P
7440-47-3	Chromium	14.7	-		P
7440-48-4	Cobalt	52.7	-		P
7440-50-8	Copper	25.1	-		P
7439-89-6	Iron	42300	-		P
7439-92-1	Lead	41.3	-		P
7439-95-4	Magnesium	1750	-		P
7439-96-5	Manganese	7050	-		P
7439-97-6	Mercury	0.08	B		CV
7440-02-0	Nickel	69.7	-		P
7440-09-7	Potassium	526	B		P
7782-49-2	Selenium	0.45	U	N	P
7440-22-4	Silver	0.23	U	N	P
7440-23-5	Sodium	270	B	E	P
7440-28-0	Thallium	1.4	B		P
7440-62-2	Vanadium	57.2	-		P
7440-66-6	Zinc	114	-	E	P

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW84

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW69

Matrix (soil/water): SOIL Lab Sample ID: 44309.26

Level (low/med): LOW Date Received: 09/13/00

% Solids: 84.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7490	-		P
7440-36-0	Antimony	1.6	B	N	P
7440-38-2	Arsenic	35.1	-		P
7440-39-3	Barium	447	-		P
7440-41-7	Beryllium	1.6	-		P
7440-43-9	Cadmium	0.96	B		P
7440-70-2	Calcium	2410	-	E	P
7440-47-3	Chromium	18.5	-		P
7440-48-4	Cobalt	34.6	-		P
7440-50-8	Copper	19.4	-		P
7439-89-6	Iron	41300	-		P
7439-92-1	Lead	35.8	-		P
7439-95-4	Magnesium	1550	-		P
7439-96-5	Manganese	4690	-		P
7439-97-6	Mercury	0.08	B		CV
7440-02-0	Nickel	37.6	-		P
7440-09-7	Potassium	487	B		P
7782-49-2	Selenium	0.46	U	N	P
7440-22-4	Silver	0.23	U	N	P
7440-23-5	Sodium	216	B	E	P
7440-28-0	Thallium	1.6	B		P
7440-62-2	Vanadium	64.3	-		P
7440-66-6	Zinc	93.9	-	E	P
			-		
			-		

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW85

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW69

Matrix (soil/water): SOIL Lab Sample ID: 44309.27

Level (low/med): LOW Date Received: 09/13/00

% Solids: 79.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG


CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9160	-		P
7440-36-0	Antimony	1.3	B	N	P
7440-38-2	Arsenic	8.4	-		P
7440-39-3	Barium	165	-		P
7440-41-7	Beryllium	0.46	B		P
7440-43-9	Cadmium	0.78	B		P
7440-70-2	Calcium	2800	-	E	P
7440-47-3	Chromium	10.4	-		P
7440-48-4	Cobalt	8.0	B		P
7440-50-8	Copper	17.0	-		P
7439-89-6	Iron	17800	-		P
7439-92-1	Lead	13.1	-		P
7439-95-4	Magnesium	2670	-		P
7439-96-5	Manganese	911	-		P
7439-97-6	Mercury	0.09	B		CV
7440-02-0	Nickel	18.5	-		P
7440-09-7	Potassium	932	B		P
7782-49-2	Selenium	0.50	U	N	P
7440-22-4	Silver	0.25	U	N	P
7440-23-5	Sodium	259	B	E	P
7440-28-0	Thallium	0.75	U		P
7440-62-2	Vanadium	21.1	-		P
7440-66-6	Zinc	65.4	-	E	P
			-		
			-		

Color Before: BROWN Clarity Before: Texture: MEDIUM

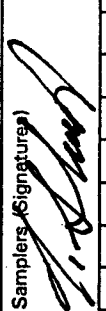
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

# **APPENDIX C**

Project Code CLP Case No.	Station No. <b>5501</b>	Month/Day/Year <b>9/12/00</b>	Time <b>0937</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) 		Preservative: <u>ICE</u>	
Tag Number <b>6-199443</b>				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Volatile Organics (VOA) <input type="checkbox"/> Semi Volatiles (ABN) <input checked="" type="checkbox"/> Pesticides/PCB <input type="checkbox"/> _____ Metals <input type="checkbox"/> Cyanide <input type="checkbox"/> Alkalinity/Hardness <input type="checkbox"/> TCLP <input type="checkbox"/> <input type="checkbox"/> VOA <input type="checkbox"/> <input type="checkbox"/> ABN <input type="checkbox"/> <input type="checkbox"/> METALS <input type="checkbox"/> Asbestos <input type="checkbox"/> Dioxin <input type="checkbox"/> Oil and Grease <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> Remarks: Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Lab Sample No. <b>FGM63</b>					

☆ U.S.GPO:1996-761-527

Project Code CLP Case No.	Station No. <b>5501</b>	Month/Day/Year <b>9/12/00</b>	Time <b>0937</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) 		Preservative: <u>ICE</u>	
Tag Number <b>6-199444</b>				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Volatile Organics (VOA) <input type="checkbox"/> Semi Volatiles (ABN) <input type="checkbox"/> Pesticides/PCB <input checked="" type="checkbox"/> _____ Metals <input type="checkbox"/> Cyanide <input type="checkbox"/> Alkalinity/Hardness <input type="checkbox"/> TCLP <input type="checkbox"/> <input type="checkbox"/> VOA <input type="checkbox"/> <input type="checkbox"/> ABN <input type="checkbox"/> <input type="checkbox"/> METALS <input type="checkbox"/> Asbestos <input type="checkbox"/> Dioxin <input type="checkbox"/> Oil and Grease <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> Remarks: Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Lab Sample No. <b>FGM63</b>					

☆ U.S.GPO:1996-761-527

003492



Project Code CLP Case No.	Station No. <b>5502</b>	Month/Day/Year <b>9/12/00</b>	Time <b>0952</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures)		Preservative: <u>ICE</u> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Volatile Organics (VOA) <input type="checkbox"/> Semi Volatiles (ABN) <input type="checkbox"/> Pesticides/PCB <input checked="" type="checkbox"/> _____ Metals <input type="checkbox"/> Cyanide <input type="checkbox"/> Alkalinity/Hardness <input type="checkbox"/> TCLP <input type="checkbox"/> <input type="checkbox"/> VOA <input type="checkbox"/> <input type="checkbox"/> ABN <input type="checkbox"/> <input type="checkbox"/> METALS <input type="checkbox"/> Asbestos <input type="checkbox"/> Dioxin <input type="checkbox"/> Oil and Grease <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> Remarks: Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Tag Number		Lab Sample No.			
<b>6-199447</b>		<b>FGM64</b>			

☆ U.S.GPO:1996-761-527

Project Code CLP Case No.	Station No. <b>5502</b>	Month/Day/Year <b>9/12/00</b>	Time <b>0952</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <u>ICE</u> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Volatile Organics (VOA) <input type="checkbox"/> Semi Volatiles (ABN) <input checked="" type="checkbox"/> Pesticides/PCB <input type="checkbox"/> _____ Metals <input type="checkbox"/> Cyanide <input type="checkbox"/> Alkalinity/Hardness <input type="checkbox"/> TCLP <input type="checkbox"/> <input type="checkbox"/> VOA <input type="checkbox"/> <input type="checkbox"/> ABN <input type="checkbox"/> <input type="checkbox"/> METALS <input type="checkbox"/> Asbestos <input type="checkbox"/> Dioxin <input type="checkbox"/> Oil and Grease <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> Remarks: Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Tag Number		Lab Sample No.			
<b>6-199446</b>		<b>FGM64</b>			

☆ U.S.GPO:1996-761-527

003491

Project Code CLP Case No.	Station No. <b>5503</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1014</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signature) <i>[Signature]</i>		Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks:		Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB <input checked="" type="checkbox"/>	
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
Oil and Grease					
Tag Number		Lab Sample No.			
<b>6-199450</b>		<b>FGM65</b>			

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Project Code CLP Case No.	Station No. <b>5503</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1014</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signature) <i>[Signature]</i>		Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks:		Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		Volatile Organics (VOA)	
				Semi Volatiles (ABN) <input checked="" type="checkbox"/>	
				Pesticides/PCB	
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
Oil and Grease					
Tag Number		Lab Sample No.			
<b>6-199449</b>		<b>FGM65</b>			

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003490

Project Code CLP Case No.	Station No. <b>5504</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1045</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
		Volatile Organics (VOA)			
		Semi Volatiles (ABN)			<input checked="" type="checkbox"/>
		Pesticides/PCB			
		Metals			
		Cyanide			
		Alkalinity/Hardness			
		TCLP			
		<input type="checkbox"/> VOA			
		<input type="checkbox"/> ABN			
		<input type="checkbox"/> METALS			
		Asbestos			
		Dioxin			
		Oil and Grease			
Tag Number <b>6-183852</b>		Lab Sample No. <b>FGM66</b>			

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Project Code CLP Case No.	Station No. <b>5504</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1045</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
		Volatile Organics (VOA)			
		Semi Volatiles (ABN)			<input checked="" type="checkbox"/>
		Pesticides/PCB			
		Metals			
		Cyanide			
		Alkalinity/Hardness			
		TCLP			
		<input type="checkbox"/> VOA			
		<input type="checkbox"/> ABN			
		<input type="checkbox"/> METALS			
		Asbestos			
		Dioxin			
		Oil and Grease			
Tag Number <b>6-183853</b>		Lab Sample No. <b>FGM66</b>			

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003489

Project Code CLP Case No.	Station No. <b>5505</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1107</b>	Designate:			
				Comp.	Grab <input checked="" type="checkbox"/>		
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>			
Remarks:		<i>[Signature]</i>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
				Volatile Organics (VOA)			
				Semi Volatiles (ABN)			
				Pesticides/PCB			<input checked="" type="checkbox"/>
				Metals			
				Cyanide			
				Alkalinity/Hardness			
				TCLP			
				<input type="checkbox"/> VOA			
				<input type="checkbox"/> ABN			
				<input type="checkbox"/> METALS			
				Asbestos			
				Dioxin			
				Oil and Grease			
				Concentration:			
<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H							
Tag Number		Lab Sample No.					
<b>6-183856</b>		<b>FGM67</b>					

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Project Code CLP Case No.	Station No. <b>5505</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1107</b>	Designate:			
				Comp.	Grab <input checked="" type="checkbox"/>		
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>			
Remarks:		<i>[Signature]</i>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
				Volatile Organics (VOA)			
				Semi Volatiles (ABN)			<input checked="" type="checkbox"/>
				Pesticides/PCB			
				Metals			
				Cyanide			
				Alkalinity/Hardness			
				TCLP			
				<input type="checkbox"/> VOA			
				<input type="checkbox"/> ABN			
				<input type="checkbox"/> METALS			
				Asbestos			
				Dioxin			
				Oil and Grease			
				Concentration:			
<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H							
Tag Number		Lab Sample No.					
<b>6-183855</b>		<b>FGM67</b>					

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003488

Project Code CLP Case No.	Station No. <b>SB02</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1003</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		Tag Number <b>6-183867</b>		Lab Sample No. <b>FGM 71</b>	
		Oil and Grease			
		Dioxin			
		Asbestos			
		<input type="checkbox"/> METALS			
		<input type="checkbox"/> ABN			
		<input type="checkbox"/> VOA			
		TCLP			
		Alkalinity/Hardness			
		Cyanide			
		Metals			
		Pesticides/PCB			
		Semi Volatiles (ABN)		<input checked="" type="checkbox"/>	
		Volatile Organics (VOA)			

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Project Code CLP Case No.	Station No. <b>SB02</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1003</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		Tag Number <b>6-183868</b>		Lab Sample No. <b>FGM 71</b>	
		Oil and Grease			
		Dioxin			
		Asbestos			
		<input type="checkbox"/> METALS			
		<input type="checkbox"/> ABN			
		<input type="checkbox"/> VOA			
		TCLP			
		Alkalinity/Hardness			
		Cyanide			
		Metals			
		Pesticides/PCB		<input checked="" type="checkbox"/>	
		Semi Volatiles (ABN)			
		Volatile Organics (VOA)			

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003487

Project Code CLP Case No.	Station No. <b>SB03</b>	Month/Day/Year <b>9/12/00</b>	Time <b>0850</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
Remarks:		<i>[Signature]</i>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
				Volatile Organics (VOA)	
				Semi Volatiles (ABN) <input checked="" type="checkbox"/>	
				Pesticides/PCB	
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
Concentration:					
<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H					
Tag Number		Lab Sample No.			
<b>6-183870</b>		<b>FGM72</b>			

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Project Code CLP Case No.	Station No. <b>SB03</b>	Month/Day/Year <b>9/12/00</b>	Time <b>0850</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
Remarks:		<i>[Signature]</i>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB <input checked="" type="checkbox"/>	
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
Concentration:					
<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H					
Tag Number		Lab Sample No.			
<b>6-183871</b>		<b>FGM72</b>			

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003486

Project Code CLP Case No.	Station No. <b>SB04</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1028</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		Tag Number <b>6-183873</b>		Lab Sample No. <b>FGM73</b>	
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
		Volatile Organics (VOA)			
		Semi Volatiles (ABN) <input checked="" type="checkbox"/>			
		Pesticides/PCB			
		Metals			
		Cyanide			
		Alkalinity/Hardness			
		TCLP			
		<input type="checkbox"/> VOA <input type="checkbox"/> ABN <input type="checkbox"/> METALS			
Asbestos					
Dioxin					
Oil and Grease					

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Project Code CLP Case No.	Station No. <b>SB04</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1028</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		Tag Number <b>6-183874</b>		Lab Sample No. <b>FGM73</b>	
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
		Volatile Organics (VOA)			
		Semi Volatiles (ABN)			
		Pesticides/PCB <input checked="" type="checkbox"/>			
		Metals			
		Cyanide			
		Alkalinity/Hardness			
		TCLP			
		<input type="checkbox"/> VOA <input type="checkbox"/> ABN <input type="checkbox"/> METALS			
Asbestos					
Dioxin					
Oil and Grease					

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003485



Project Code CLP Case No.	Station No. <b>SB05</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1055</b>	Designate:			
				Comp.	Grab <input checked="" type="checkbox"/>		
Station Location		Samplers (Signature) <i>[Signature]</i>		Preservative: <b>ICE</b>			
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		<i>[Signature]</i>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
				Volatile Organics (VOA)			
				Semi Volatiles (ABN)			<input checked="" type="checkbox"/>
				Pesticides/PCB			
				Metals			
				Cyanide			
				Alkalinity/Hardness			
				TCLP			
				<input type="checkbox"/> VOA			
				<input type="checkbox"/> ABN			
				<input type="checkbox"/> METALS			
				Asbestos			
				Dioxin			
				Oil and Grease			
				Tag Number		Lab Sample No.	
<b>6-183876</b>		<b>FGM 74</b>					

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Project Code CLP Case No.	Station No. <b>SB05</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1055</b>	Designate:			
				Comp.	Grab <input checked="" type="checkbox"/>		
Station Location		Samplers (Signature) <i>[Signature]</i>		Preservative: <b>ICE</b>			
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		<i>[Signature]</i>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
				Volatile Organics (VOA)			
				Semi Volatiles (ABN)			
				Pesticides/PCB			<input checked="" type="checkbox"/>
				Metals			
				Cyanide			
				Alkalinity/Hardness			
				TCLP			
				<input type="checkbox"/> VOA			
				<input type="checkbox"/> ABN			
				<input type="checkbox"/> METALS			
				Asbestos			
				Dioxin			
				Oil and Grease			
				Tag Number		Lab Sample No.	
<b>6-183877</b>		<b>FGM 74</b>					

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003484

Project Code CLP Case No.	Station No. <b>SB06</b>	Month/Day/Year <b>9/12/00</b>	Time <b>0907</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location				Samplers (Signatures)	
Tag Number <b>6-183879</b>				Lab Sample No. <b>FGM75</b>	
Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H				Remarks:	
Oil and Grease				Asbestos	
Dioxin				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
Pesticides/PCB				Metals	
Semi Volatiles (ABN)				Volatile Organics (VOA)	
Preservative: <b>ICE</b>				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

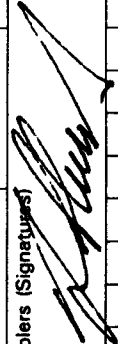
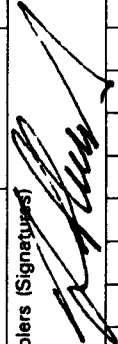
☆ U.S.GPO:1996 - 761-527

Project Code CLP Case No.	Station No. <b>SB06</b>	Month/Day/Year <b>9/12/00</b>	Time <b>0907</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location				Samplers (Signatures)	
Tag Number <b>6-183880</b>				Lab Sample No. <b>FGM75</b>	
Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H				Remarks:	
Oil and Grease				Dioxin	
				Asbestos	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
Pesticides/PCB				Metals	
Semi Volatiles (ABN)				Volatile Organics (VOA)	
Preservative: <b>ICE</b>				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

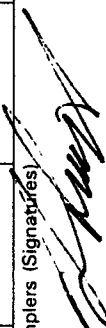
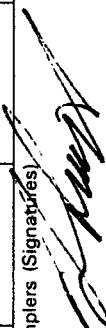
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003483



Project Code CLP Case No.	Station No. <b>SB08</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1127</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) 		Preservative: <b>ICE</b>	
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
				Volatile Organics (VOA)	
				Semi Volatiles (ABN) <input checked="" type="checkbox"/>	
				Pesticides/PCB	
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
Tag Number <b>6-183885</b>		Lab Sample No. <b>FGM77</b>			

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Project Code CLP Case No.	Station No. <b>SB08</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1127</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) 		Preservative: <b>ICE</b>	
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB <input checked="" type="checkbox"/>	
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
Tag Number <b>6-183886</b>		Lab Sample No. <b>FGM77</b>			

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003481

Project Code CLP Case No.	Station No. <b>SB09</b>	Month/Day/Year <b>9/12/00</b>	Time <b>0924</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location <b>SB09</b>				Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Station Location <b>SB09</b>				Volatile Organics (VOA)	
				Semi Volatiles (ABN) <input checked="" type="checkbox"/>	
				Pesticides/PCB	
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H					
Tag Number		Lab Sample No.			
<b>6-183888</b>		<b>FGM78</b>			

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Project Code CLP Case No.	Station No. <b>SB09</b>	Month/Day/Year <b>9/12/00</b>	Time <b>0924</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location <b>SB09</b>				Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Station Location <b>SB09</b>				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB <input checked="" type="checkbox"/>	
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H					
Tag Number		Lab Sample No.			
<b>6-183889</b>		<b>FGM78</b>			

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003480

Project Code CLP Case No.	Station No. <b>SD01</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1141</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location <b>SD01</b>				Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Samplers (Signatures) <i>[Signature]</i>				Volatile Organics (VOA)	
				Semi Volatiles (ABN) <input checked="" type="checkbox"/>	
				Pesticides/PCB	
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H					
Tag Number <b>6-183891</b>		Lab Sample No. <b>F6M 79</b>			

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Project Code CLP Case No.	Station No. <b>SD01</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1141</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location <b>SD01</b>				Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Samplers (Signatures) <i>[Signature]</i>				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB <input checked="" type="checkbox"/>	
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H					
Tag Number <b>6-183892</b>		Lab Sample No. <b>F6M 79</b>			

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003479

Project Code CLP Case No.	Station No. <b>SD02</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1325</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	<input checked="" type="checkbox"/>
				Pesticides/PCB	
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
				<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Tag Number		Lab Sample No.			
<b>6-183894</b>		<b>FGM 80</b>			

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Project Code CLP Case No.	Station No. <b>SD02</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1325</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB	<input checked="" type="checkbox"/>
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
				<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Tag Number		Lab Sample No.			
<b>6-183895</b>		<b>FGM 80</b>			

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003478



Project Code CLP Case No.	Station No. <b>SD03</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1339</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		Tag Number <b>6-183897</b>		Lab Sample No. <b>FGM81</b>	
		Oil and Grease			
		Dioxin			
		Asbestos			
		METALS			
		ABN			
		VOA			
		TCLP			
		Alkalinity/Hardness			
		Cyanide			
		Metals			
		Pesticides/PCB			
		Semi Volatiles (ABN)		<input checked="" type="checkbox"/>	
		Volatile Organics (VOA)			

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Project Code CLP Case No.	Station No. <b>SD03</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1339</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		Tag Number <b>6-183898</b>		Lab Sample No. <b>FGM81</b>	
		Oil and Grease			
		Dioxin			
		Asbestos			
		METALS			
		ABN			
		VOA			
		TCLP			
		Alkalinity/Hardness			
		Cyanide			
		Metals			
		Pesticides/PCB		<input checked="" type="checkbox"/>	
		Semi Volatiles (ABN)			
		Volatile Organics (VOA)			

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003477

Project Code CLP Case No.	Station No. <b>SD04</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1356</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		<i>[Signature]</i>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
				Volatile Organics (VOA)	
				Semi Volatiles (ABN) <input checked="" type="checkbox"/>	
				Pesticides/PCB	
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Tag Number <b>6-183900</b>	

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Project Code CLP Case No.	Station No. <b>SD04</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1356</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		<i>[Signature]</i>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB <input checked="" type="checkbox"/>	
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Tag Number <b>6-183901</b>	

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003476



Project Code CLP Case No.	Station No. <b>SD05</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1417</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	<input checked="" type="checkbox"/>
				Pesticides/PCB	
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
				<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Tag Number		Lab Sample No.			
<b>6-183903</b>		<b>FGM 83</b>			

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Project Code CLP Case No.	Station No. <b>SD05</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1417</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB	<input checked="" type="checkbox"/>
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
				<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Tag Number		Lab Sample No.			
<b>6-183904</b>		<b>FGM 83</b>			

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003475

Project Code CLP Case No.	Station No. <b>SD06</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1417</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) 		Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H				Volatile Organics (VOA)	
				Semi Volatiles (ABN) <input checked="" type="checkbox"/>	
				Pesticides/PCB	
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Tag Number <b>6-183906</b>	

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Project Code CLP Case No.	Station No. <b>SD06</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1417</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) 		Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB <input checked="" type="checkbox"/>	
				Metals	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Tag Number <b>6-183907</b>	

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003474

Project Code CLP Case No.	Station No. <b>5007</b>	Month/Day/Year <b>09/13/00</b>	Time <b>14:53</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures)		Preservative: <b>ICE</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Volatile Organics (VOA) <input type="checkbox"/> Semi Volatiles (ABN) <input type="checkbox"/> Pesticides/PCB <input checked="" type="checkbox"/> _____ Metals <input type="checkbox"/> Cyanide <input type="checkbox"/> Alkalinity/Hardness <input type="checkbox"/> TCLP <input type="checkbox"/> <input type="checkbox"/> VOA <input type="checkbox"/> <input type="checkbox"/> ABN <input type="checkbox"/> <input type="checkbox"/> METALS <input type="checkbox"/> Asbestos <input type="checkbox"/> Dioxin <input type="checkbox"/> Oil and Grease <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> Remarks: Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Tag Number		Lab Sample No.			
<b>6-183910</b>		<b>FGM 85</b>			

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Project Code CLP Case No.	Station No. <b>5007</b>	Month/Day/Year <b>09/13/00</b>	Time <b>14:53</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures)		Preservative: <b>ICE</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Volatile Organics (VOA) <input type="checkbox"/> Semi Volatiles (ABN) <input checked="" type="checkbox"/> Pesticides/PCB <input type="checkbox"/> _____ Metals <input type="checkbox"/> Cyanide <input type="checkbox"/> Alkalinity/Hardness <input type="checkbox"/> TCLP <input type="checkbox"/> <input type="checkbox"/> VOA <input type="checkbox"/> <input type="checkbox"/> ABN <input type="checkbox"/> <input type="checkbox"/> METALS <input type="checkbox"/> Asbestos <input type="checkbox"/> Dioxin <input type="checkbox"/> Oil and Grease <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> Remarks: Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Tag Number		Lab Sample No.			
<b>6-183909</b>		<b>FGM 85</b>			

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003473

Project Code CLP Case No.	Station No. <b>SB01</b>	Month/Day/Year <b>9/12/00</b>	Time <b>0943</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		Asbestos		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
		Dioxin			
		Oil and Grease			
		TCLP			
		<input type="checkbox"/> VOA			
		<input type="checkbox"/> ABN			
		<input type="checkbox"/> METALS			
Alkalinity/Hardness				Pesticides/PCB <input checked="" type="checkbox"/>	
Cyanide				Metals	
Volatile Organics (VOA)					
Semi Volatiles (ABN)					
Tag Number		Lab Sample No.			
<b>6-183865</b>		<b>FGM 70</b>			

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Project Code CLP Case No.	Station No. <b>5506</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1107</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICE</b>	
Remarks:  Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		Asbestos		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
		Dioxin			
		Oil and Grease			
		TCLP			
		<input type="checkbox"/> VOA			
		<input type="checkbox"/> ABN			
		<input type="checkbox"/> METALS			
Alkalinity/Hardness				Semi Volatiles (ABN) <input checked="" type="checkbox"/>	
Cyanide				Pesticides/PCB	
Volatile Organics (VOA)				Metals	
Tag Number		Lab Sample No.			
<b>6-183858</b>		<b>FGM 68</b>			

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002047

Project Code CLP Case No.	Station No. SB01	Month/Day/Year 9/12/00	Time 0943	Designate: Comp. <input checked="" type="checkbox"/> Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		
Tag Number 6-183864		Lab Sample No. FGM70		
Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		Remarks:		
Oil and Grease		Asbestos		
Dioxin		Cyanide		
Metals		TCLP		
Alkalinity/Hardness		<input type="checkbox"/> VOA		
Pesticides/PCB		<input type="checkbox"/> ABN		
Semi Volatiles (ABN)		<input type="checkbox"/> METALS		
Volatile Organics (VOA)		Preservative: ICE		
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

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Project Code CLP Case No.	Station No. SS07	Month/Day/Year 9/12/00	Time 0917	Designate: Comp. <input checked="" type="checkbox"/> Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		
Tag Number 6-183861		Lab Sample No. FGM69		
Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		Remarks:		
Oil and Grease		Asbestos		
Dioxin		Cyanide		
Metals		TCLP		
Alkalinity/Hardness		<input type="checkbox"/> VOA		
Pesticides/PCB		<input type="checkbox"/> ABN		
Semi Volatiles (ABN)		<input type="checkbox"/> METALS		
Volatile Organics (VOA)		Preservative: ICE		
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

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002048

Project Code CLP Case No.	Station No. 5507	Month/Day/Year 9/12/00	Time 0917	Designate:	
				Comp.	Grab
Station Location				Samplers (Signatures) <i>[Signature]</i>	
Preservative: <u>ICE</u>				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Volatile Organics (VOA)					
Semi Volatiles (ABN)					
Pesticides/PCB				<input checked="" type="checkbox"/>	
Metals					
Cyanide					
Alkalinity/Hardness					
TCLP					
<input type="checkbox"/> VOA					
<input type="checkbox"/> ABN					
<input type="checkbox"/> METALS					
Asbestos					
Dioxin					
Oil and Grease					
Remarks:					
Concentration:				<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Tag Number 6-183862		Lab Sample No. FGM 69			


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Project Code CLP Case No.	Station No. 5506	Month/Day/Year 9/12/00	Time 1107	Designate:	
				Comp.	Grab
Station Location				Samplers (Signatures) <i>[Signature]</i>	
Preservative: <u>ICE</u>				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Volatile Organics (VOA)					
Semi Volatiles (ABN)					
Pesticides/PCB				<input checked="" type="checkbox"/>	
Metals					
Cyanide					
Alkalinity/Hardness					
TCLP					
<input type="checkbox"/> VOA					
<input type="checkbox"/> ABN					
<input type="checkbox"/> METALS					
Asbestos					
Dioxin					
Oil and Grease					
Remarks:					
Concentration:				<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Tag Number 6-183859		Lab Sample No. FGM 68			

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002049



Project Code CLP Case No.	Station No. <b>SD06</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1417</b>	Designate:	
				Comp.	Grab <b>2</b>
Station Location		Samplers (Signatures) 		Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks:		Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB	
				<b>total</b> Metals <input checked="" type="checkbox"/>	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	


Tag Number

**6-183908**

Lab Sample No.

**MFJW84**

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Project Code CLP Case No.	Station No. <b>SD07</b>	Month/Day/Year <b>09/12/00</b>	Time <b>14:53</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) 		Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks:		Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H		Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB	
				<b>total</b> Metals <input checked="" type="checkbox"/>	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	


Tag Number

**6-183911**


Lab Sample No.

**MFJW85**


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Project Code CLP Case No.	Station No. <b>SD03</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1339</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) 		Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB	
				<b>Total</b> Metals <input checked="" type="checkbox"/>	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
				<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Tag Number		Lab Sample No.			
<b>6-183899</b>		<b>MFJW 81</b>			

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Project Code CLP Case No.	Station No. <b>SD04</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1356</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) 		Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB	
				<b>Total</b> Metals <input checked="" type="checkbox"/>	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
				<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Tag Number		Lab Sample No.			
<b>6-183902</b>		<b>MFJW 82</b>			

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Project Code CLP Case No.	Station No. <b>SD05</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1417</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) 		Preservative: <b>ICE</b>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB	
				<b>Total</b> Metals <input checked="" type="checkbox"/>	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
				<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Tag Number		Lab Sample No.			
<b>6-183905</b>		<b>MFJW 83</b>			

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Station No. <b>SB09</b>	Month/Day/Year <b>4/12/00</b>	Time <b>0924</b>	Designate: Comp. <input checked="" type="checkbox"/> Grab <input checked="" type="checkbox"/>
Project Code CLP Case No.	Station Location	Samplers (Signatures) <i>[Signature]</i>	
Preservative: <b>ICE</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Volatile Organics (VOA)			
Semi Volatiles (ABN)			
Pesticides/PCB			
<b>total</b> Metals <input checked="" type="checkbox"/>			
Cyanide			
Alkalinity/Hardness			
TCLP			
<input type="checkbox"/> VOA			
<input type="checkbox"/> ABN			
<input type="checkbox"/> METALS			
Asbestos			
Dioxin			
Oil and Grease			
Remarks:			
Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H			
Tag Number <b>6-183890</b>		Lab Sample No. <b>MFJW78</b>	

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Station No. <b>SD01</b>	Month/Day/Year <b>4/12/00</b>	Time <b>1141</b>	Designate: Comp. <input checked="" type="checkbox"/> Grab <input checked="" type="checkbox"/>
Project Code CLP Case No.	Station Location	Samplers (Signatures) <i>[Signature]</i>	
Preservative: <b>ICE</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Volatile Organics (VOA)			
Semi Volatiles (ABN)			
Pesticides/PCB			
<b>total</b> Metals <input checked="" type="checkbox"/>			
Cyanide			
Alkalinity/Hardness			
TCLP			
<input type="checkbox"/> VOA			
<input type="checkbox"/> ABN			
<input type="checkbox"/> METALS			
Asbestos			
Dioxin			
Oil and Grease			
Remarks:			
Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H			
Tag Number <b>6-183893</b>		Lab Sample No. <b>MFJW79</b>	

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Station No. <b>SD02</b>	Month/Day/Year <b>4/12/00</b>	Time <b>1325</b>	Designate: Comp. <input checked="" type="checkbox"/> Grab <input checked="" type="checkbox"/>
Project Code CLP Case No.	Station Location	Samplers (Signatures) <i>[Signature]</i>	
Preservative: <b>ICE</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Volatile Organics (VOA)			
Semi Volatiles (ABN)			
Pesticides/PCB			
<b>total</b> Metals <input checked="" type="checkbox"/>			
Cyanide			
Alkalinity/Hardness			
TCLP			
<input type="checkbox"/> VOA			
<input type="checkbox"/> ABN			
<input type="checkbox"/> METALS			
Asbestos			
Dioxin			
Oil and Grease			
Remarks:			
Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H			
Tag Number <b>6-183896</b>		Lab Sample No. <b>MFJW80</b>	

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Project Code CLP Case No.	Station No. <b>SB06</b>	Month/Day/Year <b>9/12/00</b>	Time <b>0907</b>	Designate:		Station Location	Tag Number <b>6-183881</b>	Lab Sample No. <b>MFJW 75</b>
				Comp.	Grab <input checked="" type="checkbox"/>			
				Sampers (Signatures) <i>[Signature]</i>				
				Preservative: <b>ICE</b>				
				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
				Volatile Organics (VOA)				
				Semi Volatiles (ABN)				
				Pesticides/PCB				
				<b>total</b> Metals <input checked="" type="checkbox"/>				
				Cyanide				
				Alkalinity/Hardness				
				TCLP				
				<input type="checkbox"/> VOA				
				<input type="checkbox"/> ABN				
				<input type="checkbox"/> METALS				
				Asbestos				
				Dioxin				
				Oil and Grease				
				Remarks:				
				Concentration:				
				<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H				

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Project Code CLP Case No.	Station No. <b>SB07</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1127</b>	Designate:		Station Location	Tag Number <b>6-183884</b>	Lab Sample No. <b>MFJW 76</b>
				Comp.	Grab <input checked="" type="checkbox"/>			
				Sampers (Signatures) <i>[Signature]</i>				
				Preservative: <b>ICE</b>				
				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
				Volatile Organics (VOA)				
				Semi Volatiles (ABN)				
				Pesticides/PCB				
				<b>total</b> Metals <input checked="" type="checkbox"/>				
				Cyanide				
				Alkalinity/Hardness				
				TCLP				
				<input type="checkbox"/> VOA				
				<input type="checkbox"/> ABN				
				<input type="checkbox"/> METALS				
				Asbestos				
				Dioxin				
				Oil and Grease				
				Remarks:				
				Concentration:				
				<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H				

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Project Code CLP Case No.	Station No. <b>SB08</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1127</b>	Designate:		Station Location	Tag Number <b>6-183887</b>	Lab Sample No. <b>MFJW 77</b>
				Comp.	Grab <input checked="" type="checkbox"/>			
				Sampers (Signatures) <i>[Signature]</i>				
				Preservative: <b>ICE</b>				
				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
				Volatile Organics (VOA)				
				Semi Volatiles (ABN)				
				Pesticides/PCB				
				<b>total</b> Metals <input checked="" type="checkbox"/>				
				Cyanide				
				Alkalinity/Hardness				
				TCLP				
				<input type="checkbox"/> VOA				
				<input type="checkbox"/> ABN				
				<input type="checkbox"/> METALS				
				Asbestos				
				Dioxin				
				Oil and Grease				
				Remarks:				
				Concentration:				
				<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H				

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Project Code CLP Case No.	Station No. <b>SB03</b>	Month/Day/Year <b>9/12/00</b>	Time <b>0850</b>	Designate:	Preservative: <b>ICE</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
				Grab <input checked="" type="checkbox"/>	
Station Location		Station No.		Comp.	Volatile Organics (VOA) Semi Volatiles (ABN) Pesticides/PCB <del>total</del> Metals <input checked="" type="checkbox"/> Cyanide Alkalinity/Hardness TCLP <input type="checkbox"/> VOA <input type="checkbox"/> ABN <input type="checkbox"/> METALS Asbestos Dioxin Oil and Grease Remarks: Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H
Samplers (Signatures)		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	

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Project Code CLP Case No.	Station No. <b>SB04</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1028</b>	Designate:	Preservative: <b>ICE</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
				Grab <input checked="" type="checkbox"/>	
Station Location		Station No.		Comp.	Volatile Organics (VOA) Semi Volatiles (ABN) Pesticides/PCB <del>total</del> Metals <input checked="" type="checkbox"/> Cyanide Alkalinity/Hardness TCLP <input type="checkbox"/> VOA <input type="checkbox"/> ABN <input type="checkbox"/> METALS Asbestos Dioxin Oil and Grease Remarks: Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H
Samplers (Signatures)		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	

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Project Code CLP Case No.	Station No. <b>SB05</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1055</b>	Designate:	Preservative: <b>ICE</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
				Grab <input checked="" type="checkbox"/>	
Station Location		Station No.		Comp.	Volatile Organics (VOA) Semi Volatiles (ABN) Pesticides/PCB <del>total</del> Metals <input checked="" type="checkbox"/> Cyanide Alkalinity/Hardness TCLP <input type="checkbox"/> VOA <input type="checkbox"/> ABN <input type="checkbox"/> METALS Asbestos Dioxin Oil and Grease Remarks: Concentration: <input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H
Samplers (Signatures)		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	
Tag Number		Month/Day/Year		Time	
Lab Sample No.		Month/Day/Year		Time	

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Project Code CLP Case No.	Station No. <b>5504</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1045</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICF</b>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB	
				<b>total</b> Metals <input checked="" type="checkbox"/>	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
				<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Tag Number <b>6-183854</b>		Lab Sample No. <b>MFJW66</b>			

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Project Code CLP Case No.	Station No. <b>5505</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1107</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICF</b>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB	
				<b>total</b> Metals <input checked="" type="checkbox"/>	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
				<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Tag Number <b>6-183857</b>		Lab Sample No. <b>MFJW67</b>			

☆ U.S.GPO:1996 - 761-527

Project Code CLP Case No.	Station No. <b>5506</b>	Month/Day/Year <b>9/12/00</b>	Time <b>1107</b>	Designate:	
				Comp.	Grab <input checked="" type="checkbox"/>
Station Location		Samplers (Signatures) <i>[Signature]</i>		Preservative: <b>ICF</b>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB	
				<b>total</b> Metals <input checked="" type="checkbox"/>	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
				<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H	
Tag Number <b>6-183860</b>		Lab Sample No. <b>MFJW68</b>			

☆ U.S.GPO:1996 - 761-527

Project Code CLP Case No.	Station No.	Month/Day/Year	Time	Designate:	
				Comp.	Grab
5501	9/12/00	0937	[Signature]	Preservative: <u>ICE</u>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Station Location				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB	
				<u>Total</u> Metals <input checked="" type="checkbox"/>	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H					
Tag Number		Lab Sample No.			
6-199445		MFJW63			

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Project Code CLP Case No.	Station No.	Month/Day/Year	Time	Designate:	
				Comp.	Grab
5502	9/12/00	0952	[Signature]	Preservative: <u>ICE</u>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Station Location				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB	
				<u>Total</u> Metals <input checked="" type="checkbox"/>	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H					
Tag Number		Lab Sample No.			
6-199448		MFJW64			

☆U.S.GPO:1996-761-527

Project Code CLP Case No.	Station No.	Month/Day/Year	Time	Designate:	
				Comp.	Grab
5503	9/12/00	1014	[Signature]	Preservative: <u>ICE</u>	
				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Station Location				Volatile Organics (VOA)	
				Semi Volatiles (ABN)	
				Pesticides/PCB	
				<u>Total</u> Metals <input checked="" type="checkbox"/>	
				Cyanide	
				Alkalinity/Hardness	
				TCLP	
				<input type="checkbox"/> VOA	
				<input type="checkbox"/> ABN	
				<input type="checkbox"/> METALS	
				Asbestos	
				Dioxin	
				Oil and Grease	
				Remarks:	
				Concentration:	
<input checked="" type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H					
Tag Number		Lab Sample No.			
6-183851		MFJW65			

☆U.S.GPO:1996-761-527



# **APPENDIX D**

# FedEx USA Airbill FedEx Tracking Number 8214 1334 0231

**1 From** Please print and press hard.  
 Date 9-12-00 Sender's FedEx Account Number 0722-0252-0  
 Sender's Name Terry Sligh Phone (501) 682-0853  
 Company ARK DEPT OF ENVIR QUALITY  
 Address 8001 NATIONAL DR  
 City LITTLE ROCK State AR ZIP 72209

**2 Your Internal Billing Reference** First 34 characters will appear on invoice. OPTIONAL

**3 To**  
 Recipient's Name Deborah Inman Phone (918) 251-0545  
 Company AATS  
 Address 1700 West Albany, Suite C  
 City Broken Arrow State OK ZIP 74012

Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at [www.fedex.com](http://www.fedex.com)

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

0145675055

## Sender's Copy

### 4a Express Package Service

☒ FedEx Priority Overnight Next business morning ☐ FedEx Standard Overnight Next business afternoon ☐ FedEx First Overnight Earliest next business morning delivery to select locations

☐ FedEx 2Day® Second business day ☐ FedEx Express Saver® Third business day

\* FedEx Envelope/Letter Rate not available. Minimum charge: One-pound rate.

### 4b Express Freight Service

☐ FedEx 1Day Freight® Next business day ☐ FedEx 2Day Freight Second business day ☐ FedEx 3Day Freight Third business day

\* Call for Confirmation.

### 5 Packaging

☐ FedEx Envelope/Letter® ☐ FedEx Pak® ☒ Other Pkg. Includes FedEx Box, FedEx Tube, and customer pkg.

### 6 Special Handling

☐ SATURDAY Delivery Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes ☐ SUNDAY Delivery Available for FedEx Priority Overnight to select ZIP codes ☐ HOLD Weekday at FedEx Location Not available with FedEx First Overnight ☐ HOLD Saturday at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods?

☒ No ☐ Yes As per attached Shipper's Declaration ☐ Yes Shipper's Declaration not required ☐ Dry Ice Dry Ice, 5, UN 1845 ☐ Cargo Aircraft Only

### 7 Payment BILL TO:

☒ Sender Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

FedEx Acct. No. Enter FedEx Acct. No. or Credit Card No. below. Exp. Date

Total Packages 1 Total Weight 15 Total Declared Value\* .00

\*Our liability is limited to \$100 unless you declare a higher value. See back for details.

### 8 Release Signature Sign to authorize delivery without obtaining signature.

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

402

SNP 0500 • Rev. Date 3/00 • Part #155912 • ©1994-2000 FedEx • PRINTED IN U.S.A.

PULL AND RETAIN THIS COPY BEFORE AFFIXING TO THE PACKAGE.

# FedEx USA Airbill

FedEx  
Tracking  
Number

8214 1334 0210

## 1 From Please print and press hard.

Date 9-12-00 Sender's FedEx Account Number 0722-0252-0

Sender's Name Terry Sligh Phone (501) 682-0853

Company ARK DEPT OF ENVIR QUALITY

Address 8001 NATIONAL DR

Dept./Room/Suite/Floor

City LITTLE ROCK State AR ZIP 72209

## 2 Your Internal Billing Reference

First 24 characters will appear on invoice.

OPTIONAL

## 3 To

Recipient's Name Rich Mannz Phone (314) 434-4570

Company American Technical & Analytical Services

Address 875 Fee Fee Road

To "HOLD" at FedEx location, print FedEx address.

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Room/Suite/Floor

City Maryland Heights State MO ZIP 63043

Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at [www.fedex.com](http://www.fedex.com)

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

0145675055

Sender's Copy

## 4a Express Package Service

☒ FedEx Priority Overnight Next business morning ☐ FedEx Standard Overnight Next business afternoon ☐ FedEx First Overnight Earliest next business morning delivery to select locations

☐ FedEx 2Day\* Second business day

☐ FedEx Express Saver\* Third business day

\* FedEx Envelope/Letter Rate not available Minimum charge: One-pound rate

## 4b Express Freight Service

☐ FedEx 1Day Freight\* Next business day ☐ FedEx 2Day Freight Second business day ☐ FedEx 3Day Freight Third business day

\* Call for Confirmation:

\* Declared value limit \$500

## 5 Packaging

☐ FedEx Envelope/Letter\* ☐ FedEx Pak\* ☒ Other Pkg. Includes FedEx Box, FedEx Tube, and customer pkg.

## 6 Special Handling

☐ SATURDAY Delivery Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes ☐ SUNDAY Delivery Available for FedEx Priority Overnight to select ZIP codes ☐ HOLD Weekday at FedEx Location Not available with FedEx First Overnight ☐ HOLD Saturday at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods?

☒ No ☐ Yes As per attached Shipper's Declaration ☐ Yes Shipper's Declaration not required ☐ Dry Ice Dry Ice, 9 UN 1845 x \_\_\_\_\_ kg ☐ Cargo Aircraft Only

## 7 Payment Bill to:

☒ Sender Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

FedEx Acct. No.  
Credit Card No.

Exp.  
Date

Total Packages

Total Weight

Total Declared Value\*

\$ .00

FedEx Use Only

## 8 Release Signature Sign to authorize delivery without obtaining signature.

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

SFP 0500 • Rev. Date 3/00 • Part #155812 • ©1994-2000 FedEx • PRINTED IN U.S.A.

402

PULL AND RETAIN THIS COPY BEFORE AFFIXING TO THE PACKAGE.



United States Environmental Protection Agency  
Contract Laboratory Program

**Organic Traffic Report  
& Chain of Custody Record**  
(For Organic CLP Analysis)

Case No.

28507

1. Project Code	Account Code	2. Region No. 6	Sampling Co. ADEQ	4. Date Shipped 9/12/00	Carrier Fed Ex	6. Matrix (Enter in Column A)  1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)	7. Preservative (Enter in Column D)  1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved																
Regional Information		Sampler (Name) Terry Slight		Airbill Number 8214 1334 0210																			
Non-Superfund Program		Sampler Signature <i>[Signature]</i>		5. Ship To ATAS 875 Fee Fee Road Maryland Heights, Mo 63043 ATTN: Rich Mannz																			
Site Name BPS, Inc.		3. Purpose* <table border="0"><tr><td>Lead</td><td>Early Action</td><td>Long-Term Action</td></tr><tr><td><input type="checkbox"/> SF</td><td><input type="checkbox"/> CLEM</td><td><input type="checkbox"/> FS</td></tr><tr><td><input type="checkbox"/> PRP</td><td><input type="checkbox"/> PA</td><td><input type="checkbox"/> RD</td></tr><tr><td><input checked="" type="checkbox"/> ST</td><td><input type="checkbox"/> REM</td><td><input type="checkbox"/> RA</td></tr><tr><td><input type="checkbox"/> FED</td><td><input checked="" type="checkbox"/> RI</td><td><input type="checkbox"/> O&amp;M</td></tr><tr><td></td><td><input type="checkbox"/> ESI</td><td><input type="checkbox"/> NPLD</td></tr></table>		Lead	Early Action			Long-Term Action	<input type="checkbox"/> SF	<input type="checkbox"/> CLEM	<input type="checkbox"/> FS	<input type="checkbox"/> PRP	<input type="checkbox"/> PA	<input type="checkbox"/> RD	<input checked="" type="checkbox"/> ST	<input type="checkbox"/> REM	<input type="checkbox"/> RA	<input type="checkbox"/> FED	<input checked="" type="checkbox"/> RI	<input type="checkbox"/> O&M		<input type="checkbox"/> ESI	<input type="checkbox"/> NPLD
Lead	Early Action	Long-Term Action																					
<input type="checkbox"/> SF	<input type="checkbox"/> CLEM	<input type="checkbox"/> FS																					
<input type="checkbox"/> PRP	<input type="checkbox"/> PA	<input type="checkbox"/> RD																					
<input checked="" type="checkbox"/> ST	<input type="checkbox"/> REM	<input type="checkbox"/> RA																					
<input type="checkbox"/> FED	<input checked="" type="checkbox"/> RI	<input type="checkbox"/> O&M																					
	<input type="checkbox"/> ESI	<input type="checkbox"/> NPLD																					
City, State Hekna, AR		Site Spill ID																					

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7)	E RAS Analysis				F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier
	Other:				VOA	BNA	Pos/PCB	High only ARO/TOX						
FGM63	5	L	G	5		X	X		6-199443-44	SS01	9/12/00 9:37	MFJW 63	T3	
FGM64	5	L	G	5		X	X		6-199446-47	SS02	9/12/00 9:52	MFJW 64	T3	
FGM65	5	L	G	5		X	X		6-199449-50	SS03	9/12/00 10:14	MFJW 65	T3	
FGM66	5	L	G	5		X	X		6-183852-53	SS04	9/12/00 10:45	MFJW 66	T3	
FGM67	5	L	G	5		X	X		6-183855-56	SS05	9/12/00 11:07	MFJW 67	T3	
FGM68	5	L	G	5		X	X		6-183858-59	SS06	9/12/00 11:07	MFJW 68	T3	D of SS05
FGM69	5	L	G	5		X	X		6-183861-62	SS07	9/12/00 9:17	MFJW 69	T3	
FGM70	5	L	G	5		X	X		6-183864-65	SB01	9/12/00 9:43	MFJW 70	T3	

Shipment for Case Complete? (Y/N) Y	Page 1 of 3	Sample(s) to be Used for Laboratory QC FGM64, FGM69	Additional Sample Signatures <i>[Signature]</i>	Chain of Custody Seal Number(s)
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**CHAIN OF CUSTODY RECORD**

Relinquished by: (Signature) <i>[Signature]</i>	Date / Time 9/12/00 1800	Received by: (Signature) Fed Ex	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

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382757



United States Environmental Protection Agency  
Contract Laboratory Program

**Organic Traffic Report  
& Chain of Custody Record**  
(For Organic CLP Analysis)

Case No.

28507

1. Project Code		Account Code		2. Region No. <b>6</b>		Sampling Co. <b>ADFO</b>		4. Date Shipped <b>9/12/00</b>		Carrier <b>Fed Ex</b>		6. Matrix (Enter in Column A)		7. Preservative (Enter in Column D)															
Regional Information				Sampler (Name) <b>Terry Sligh</b>				Airbill Number <b>8214 1334 0210</b>				1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)		1. HCl 2. HNO <sub>3</sub> 3. NaHSO <sub>4</sub> 4. H <sub>2</sub> SO <sub>4</sub> 5. Ice only 6. Other (Specify in Column D) N. Not preserved															
Non-Superfund Program				Sampler Signature <i>[Signature]</i>				5. Ship To <b>ATAS</b> <b>875 Fee Fee Road</b> <b>Maryland Heights, MO</b> <b>63043</b> <b>ATTN: Rich Mannz</b>																					
Site Name <b>BPS, Inc.</b>				3. Purpose* Lead: <input type="checkbox"/> SF <input type="checkbox"/> PRP <input checked="" type="checkbox"/> ST <input type="checkbox"/> FED Early Action: <input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> RI <input checked="" type="checkbox"/> SI <input type="checkbox"/> ESI Long-Term Action: <input type="checkbox"/> FS <input type="checkbox"/> RD <input type="checkbox"/> RA <input type="checkbox"/> O&M <input type="checkbox"/> NPLD																									
City, State <b>Helena, AR</b>		Site Spill ID		CLP Sample Numbers (from labels)				A Matrix (from Box 6) Other:		B Conc.: Low Med High		C Sample Type: Comp. Grab		D Preservative (from Box 7) Other:		E RAS Analysis VOA BNA PCB High only ARO/TOX		F Regional Specific Tracking Number or Tag Numbers		G Station Location Identifier		H Mo/Day/Year/Time Sample Collection		I Corresponding CLP Inorganic Sample No.		J Sampler Initials		K Field QC Qualifier B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. -- = Not a QC Sample	
FGM71		5		L		G		S		X		X				6-183867-68		SB02		9/12/00 10:03		MFTW 71		TS					
FGM72		5		L		G		S		X		X				6-183870-71		SB03		9/12/00 8:56		MFTW 72		TS					
FGM73		5		L		G		S		X		X				6-183873-74		SB04		9/12/00 10:28		MFTW 73		TS					
FGM74		5		L		G		S		X		X				6-183876-77		SB05		9/12/00 10:55		MFTW 74		TS					
FGM75		5		L		G		S		X		X				6-183879-80		SB06		9/12/00 9:07		MFTW 75		TS					
FGM76		5		L		G		S		X		X				6-183882-83		SB07		9/12/00 11:27		MFTW 76		TS					
FGM77		5		L		G		S		X		X				6-183885-86		SB08		9/12/00 11:27		MFTW 77		TS		DoS SB07			
FGM78		5		L		G		S		X		X				6-183888-89		SB09		9/12/00 9:24		MFTW 78		TS					
Shipment for Case Complete? (Y/N)		Page <b>2 of 3</b>		Sample(s) to be Used for Laboratory QC				Additional Sample Signatures <i>[Signature]</i>				Chain of Custody Seal Number(s)																	

**CHAIN OF CUSTODY RECORD**

Relinquished by: (Signature) <i>[Signature]</i>	Date / Time <b>9/12/00 1800</b>	Received by: (Signature) <b>Fed Ex</b>	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

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382756



United States Environmental Protection Agency  
Contract Laboratory Program

**Organic Traffic Report  
& Chain of Custody Record**  
(For Organic CLP Analysis)

Case No.

28507

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier	6. Matrix (Enter in Column A)  1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)	7. Preservative (Enter in Column D)  1. HCl 2. HNO <sub>3</sub> 3. NaHSO <sub>4</sub> 4. H <sub>2</sub> SO <sub>4</sub> 5. Ice only 6. Other (Specify in Column D) N. Not preserved
Regional Information		Sampler (Name)		Airbill Number			
Non-Superfund Program		Sampler Signature		5. Ship To			
Site Name		3. Purpose*		ATAS			
City, State		Site Spill ID		875 Fee Fee Road		Maryland Heights, Mo 63043	
Helena, AR				ATTN: Rich Mannz			

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E RAS Analysis					F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier B = Blank S = Spike D = Duplicate R = Pinstate PE = Perform. Eval. -- = Not a QC Sample
					VOA	BNA	COG	High only	ARO/TOX						
FGM79	S	L	G	S		X	X			6-183891-92	SD01	9/12/00 11:41	MFTW79	TS	
FGM80	S	L	G	S		X	X			6-18389495	SD02	9/12/00 13:25	MFTW80	TS	
FGM81	S	L	G	S		X	X			6-183897-98	SD03	9/12/00 13:39	MFTW81	TS	
FGM82	S	L	G	S		X	X			6-183900-01	SD04	9/12/00 13:56	MFTW82	TS	
FGM83	S	L	G	S		X	X			6-183903-04	SD05	9/12/00 14:17	MFTW83	TS	
FGM84	S	L	G	S		X	X			6-183906-07	SD06	9/12/00 14:17	MFTW84	TS	Det SD05
FGM85	S	L	G	S		X	X			6-183909-10	SD07	9/12/00 14:53	MFTW85	TS	

Shipment for Case Complete? (Y/N)	Page 3 of 3	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
			Decky Prewett	

**CHAIN OF CUSTODY RECORD**

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	9/12/00 1800	Fed Ex			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

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322752



United States Environmental Protection Agency  
Contract Laboratory Program

**Inorganic Traffic Report  
& Chain of Custody Record**  
(For Inorganic CLP Analysis)

Case No.

28507

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier	6. Matrix (Enter in Column A)	7. Preservative (Enter in Column D)
		6	ADEQ	9/12/00	Fed Ex		
Regional Information		Sampler (Name)		Airbill Number			
		Terry Slight		8214 1334 0231			
Non-Superfund Program		Sampler Signature		5. Ship To			
		<i>[Signature]</i>		AATS 1700 West Albany Suite C Broken Arrow, OK 74012			
Site Name		3. Purpose		ATTN: Deborah Timan			
BPS, Inc.		Early Action Lead <input type="checkbox"/> SF <input type="checkbox"/> PRP <input checked="" type="checkbox"/> ST <input type="checkbox"/> FED					
City, State		Long-Term Action <input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> RI <input checked="" type="checkbox"/> SI <input type="checkbox"/> ESI					
Helena, AR		<input type="checkbox"/> FS <input type="checkbox"/> RD <input type="checkbox"/> RA <input type="checkbox"/> O&M <input type="checkbox"/> INPLD					
Site Spill ID							

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E - RAS Analysis							F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sample Initials	K Field QC Qualifier
					Diss. Metals	Total Metals	Cyanide	NO <sub>2</sub> /NO <sub>3</sub>	Low only	Fluoride	High only						
MFTW63	5	L	G	6	X							6-199445	SS01	9/12/00 9:32	FGM63	TS	
MFTW64	5	L	G	6	X							6-199448	SS02	9/12/00 9:52	FGM64	TS	
MFTW65	5	L	G	6	X							6-183851	SS03	9/12/00 10:14	FGM65	TS	
MFTW66	5	L	G	6	X							6-183854	SS04	9/12/00 10:45	FGM66	TS	
MFTW67	5	L	G	6	X							6-183857	SS05	9/12/00 11:07	FGM67	TS	
MFTW68	5	L	G	6	X							6-183860	SS06	9/12/00 11:07	FGM68	TS	DoFSS05
MFTW69	5	L	G	6	X							6-183863	SS07	9/12/00 9:17	FGM69	TS	
MFTW70	5	L	G	6	X							6-183866	SB01	9/12/00 9:43	FGM70	TS	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Y	1 of 3	MFTW64, MFTW69	<i>[Signature]</i>	

**CHAIN OF CUSTODY RECORD**

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
<i>[Signature]</i>	9/12/00 1800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

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371825

A21-012-13 REV



United States Environmental Protection Agency  
Contract Laboratory Program

**Inorganic Traffic Report  
& Chain of Custody Record**  
(For Inorganic CLP Analysis)

Case No.

28507

1. Project Code	Account Code	2. Region No. <b>6</b>	Sampling Co. <b>ADEQ</b>	4. Date Shipped <b>9/12/00</b>	Carrier <b>Fed Ex</b>	6. Matrix (Enter in Column A)  1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)	7. Preservative (Enter in Column D)  1. HCl 2. HNO <sub>3</sub> 3. NaOH 4. H <sub>2</sub> SO <sub>4</sub> 5. K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> 6. Ice only 7. Other (specify in Column D) N. Not preserved
Regional Information		Sampler (Name) <b>Terry Sligh</b>		Airbill Number <b>8214 1334 0231</b>			
Non-Superfund Program		Sampler Signature <i>[Signature]</i>		5. Ship To <b>AATS</b> <b>1700 West Albany, Suite C</b> <b>Broken Arrow, OK</b> <b>74012</b> <b>ATTN: Deborah Inman</b>			
Site Name <b>BPS, Inc.</b>		3. Purpose* Lead <input type="checkbox"/> SF <input type="checkbox"/> PRP <input checked="" type="checkbox"/> ST <input type="checkbox"/> FED Early Action <input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> RI <input checked="" type="checkbox"/> SI <input type="checkbox"/> ESI Long-Term Action <input type="checkbox"/> FS <input type="checkbox"/> RD <input type="checkbox"/> RA <input type="checkbox"/> O&M <input type="checkbox"/> NPLD					
City, State <b>Helena, AR</b>		Site Spill ID					

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E - RAS Analysis							F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier B = Blank S = Spike D = Duplicate R = Rinse PE = Perform. Eval. - = Not a QC Sample
					Diss. Metals	Total Metals	Cyanide	NO <sub>2</sub> /NO <sub>3</sub>	Fluoride	pH	Conduct.						
MFJW71	S	L	G	6		X						6-183869	SB02	9-12-00 10:03	FGM71	TS	
MFJW72	S	L	G	6		X						6-183872	SB03	9-12-00 8:56	FGM72	TS	
MFJW73	S	L	G	6		X						6-183875	SB04	9-12-00 10:28	FGM73	TS	
MFJW74	S	L	G	6		X						6-183878	SB05	9-12-00 10:55	FGM74	TS	
MFJW75	S	L	G	6		X						6-183881	SB06	9-12-00 9:07	FGM75	TS	
MFJW76	S	L	G	6		X						6-183884	SB07	9-12-00 11:27	FGM76	TS	
MFJW77	S	L	G	6		X						6-183887	SB08	9-12-00 11:27	FGM77	TS	Det SB07
MFJW78	S	L	G	6		X						6-183890	SB09	9-12-00 9:24	FGM78	TS	

Shipment for Case Complete? <b>(Y/N)</b>	Page <b>2 of 3</b>	Sample(s) to be Used for Laboratory QC	Additional Sample Signatures <i>[Signature]</i>	Chain of Custody Seal Number(s)
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**CHAIN OF CUSTODY RECORD**

Relinquished by: (Signature) <i>[Signature]</i>	Date / Time <b>9/12/00 1800</b>	Received by: (Signature) <b>Fed Ex</b>	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

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371824





United States Environmental Protection Agency  
Contract Laboratory Program

**Inorganic Traffic Report  
& Chain of Custody Record**  
(For Inorganic CLP Analysis)

Case No.

28507

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier	6. Matrix (Enter in Column A)  1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)	7. Preservative (Enter in Column D)  1. HCl 2. HNO <sub>3</sub> 3. NaOH 4. H <sub>2</sub> SO <sub>4</sub> 5. K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> 6. Ice only 7. Other (specify in Column D) N. Not preserved
Regional Information		Sampler (Name)		Airbill Number			
Non-Superfund Program		Sampler Signature		5. Ship To			
Site Name		3. Purpose*		1700 West Albany, Suite C Broken Arrow, OK 74012 ATTN: Deborah Inman			
City, State		Site Spill ID					

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preser- vative (from Box 7)	E - RAS Analysis								F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier
					Other:	Diss. Metals	Total Metals	Cyanide	NO <sub>2</sub> /NO <sub>3</sub>	Low only	High only	Fluoride						
MFJW 79	S	L	G	6		X							6-183893	SD01	9/12/00 11:41	FGM 79	TS	
MFJW 80	S	L	G	6		X							6-183896	SD02	9/12/00 13:23	FGM 80	TS	
MFJW 81	S	L	G	6		X							6-183899	SD03	9/12/00 13:39	FGM 81	TS	
MFJW 82	S	L	G	6		X							6-183902	SD04	9/12/00 13:56	FGM 82	TS	
MFJW 83	S	L	G	6		X							6-183905	SD05	9/12/00 14:17	FGM 83	TS	
MFJW 84	S	L	G	6		X							6-183908	SD06	9/12/00 14:17	FGM 84	TS	Def SD05
MFJW 85	S	L	G	6		X							6-183911	SD07	9/12/00 14:53	FGM 85	TS	

Shipment for Case Complete? <input checked="" type="checkbox"/> (Y/N)	Page 3 of 3	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures <i>Vickie Hewitt</i>	Chain of Custody Seal Number(s)
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**CHAIN OF CUSTODY RECORD**

Relinquished by: (Signature) <i>[Signature]</i>	Date / Time 9/12/00 1500	Received by: (Signature) <i>Fed Ex</i>	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

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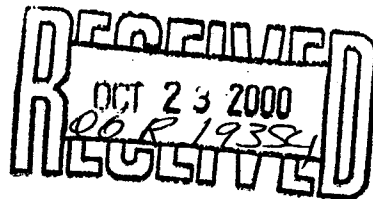
371823

A21-012-13 REV



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
HOUSTON BRANCH  
10625 FALLSTONE RD.  
HOUSTON, TEXAS 77099



MEMORANDUM

Date: October 19, 2000

Subject: Contract Laboratory Program Data Review

From: *Marvelyn Humphrey*  
Marvelyn Humphrey, Alternate ESAT RPO, 6MD-HC

To: P. Ofosu, 6SF-RA

Site : BPS INC.

Case#: 28507

SDG# : FGM63

The EPA Region 6 Houston Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP ) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package is acceptable for regional use. Problems, if any, are listed in the report narrative.

If you have any questions regarding the data review report, please call me at (281) 983-2140.

Attachments

cc: R. Flores, Region 6 CLP/TPO  
M. El-Feky, Region 6 Data Coordinator  
Files (2)

LOCKHEED MARTIN SERVICES GROUP  
ESAT REGION VI  
10101 SOUTHWEST FREEWAY, SUITE 500  
HOUSTON, TX 77074

**MEMORANDUM**

**DATE:** October 18, 2000  
**TO:** Melvin Ritter/Marvelyn Humphrey, ESAT RPO/Alternate  
RPO, Region VI  
**FROM:** Tom C.H. Chiang, ESAT Team Manager, Region VI *TOM CHIANG*  
**SUBJECT:** CLP Data Review *37 Mchale*  
**REF:** TDF # 6-1013A ESAT # O-2267  
ESAT Contract No. 68-D6-0005 *James*

Attached is the data review summary for Case # 28507  
SDG # FGM63  
Site BPS Inc.

**COMMENTS:**

**I. CONTRACTUAL ASSESSMENT OF THE DATA PACKAGE**

- A. The hardcopy review and the CCS audit found the contractually noncompliant item below.

The laboratory failed to dilute and reanalyze Pest/PCB samples FG-M63 and FG-M64 with  $\beta$ -BHC,  $\delta$ -BHC, endosulfan I, DDE, dieldrin, and/or endrin peak responses exceeding the calibration upper limits on one column (OLM04.2, p. D-66/PEST, sec. 11.3.5). This omission did not affect the result usability.

- B. The hardcopy review found the contractually noncompliant item below that CCS is not expected to detect.

The data package arrived 4 working days late for the contractual 14-day turnaround requirement.

**II. TECHNICAL USABILITY ASSESSMENT OF THE DATA PACKAGE**

The total number of results reviewed was 1,860 for this data package. Some results were qualified because of technical problems. The significant technical problems are summarized below.

- A. Coeluting toxaphene peaks interfered with the quantitation of DDD for samples FG-M67 and FG-M80.
- B. The field duplicate samples FG-M67 and FG-M68 (in SDG FGM68) had inconsistent toxaphene concentrations.
- C. Aldrin, dieldrin, and DDT had outlying MS recoveries and %RPD's.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 6  
HOUSTON BRANCH  
10625 FALLSTONE ROAD  
HOUSTON, TEXAS 77099

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO.	28507	SITE	BPS Inc.
LABORATORY	ATAS	NO. OF SAMPLES	20
CONTRACT#	68-W-00-066	MATRIX	Soil
SDG#	FGM63	REVIEWER (IF NOT ESD)	ESAT
SOW#	OLM04.2	REVIEWER'S NAME	Ying-Ping Hsieh
ACCT#	150102DJN01	COMPLETION DATE	October 18, 2000
SF#	50102DDY		

SAMPLE NO.	FG-M63	FG-M67	FG-M74	FG-M78	FG-M82
	FG-M64	FG-M71	FG-M75	FG-M79	FG-M83
	FG-M65	FG-M72	FG-M76	FG-M80	FG-M84
	FG-M66	FG-M73	FG-M77	FG-M81	FG-M85

DATA ASSESSMENT SUMMARY

	BNA	PEST
1. HOLDING TIMES	O	O
2. GC/MS TUNE/INSTR. PERFORM.	O	O
3. CALIBRATIONS	O	O
4. BLANKS	O	M
5. SMC/SURROGATES	O	O
6. MATRIX SPIKE/DUPLICATE	O	M
7. OTHER QC	O	M
8. INTERNAL STANDARDS (IS)	O	N/A
9. COMPOUND ID/QUANTITATION	O	M
10. PERFORMANCE/COMPLETENESS	O	O
11. OVERALL ASSESSMENT	O	M

O = Data had no problems.

M = Data qualified due to major or minor problems.

Z = Data unacceptable.

NA = Not applicable.

**ACTION ITEMS:** The data package arrived 4 working days late for the contractual 14-day turnaround requirement.

**AREA OF CONCERN:** The laboratory failed to dilute and reanalyze two Pest/PCB samples with target analyte peak responses exceeding the contractual upper limits on one column. Coeluting toxaphene peaks interfered with the quantitation of DDD for samples FG-M67 and FG-M80. The field duplicate samples FG-M67 and FG-M68 (in SDG FGM68) have inconsistent toxaphene concentrations. Aldrin, dieldrin, and DDT had outlying MS recoveries and %RPD's. The two-column quantitation results were inconsistent for several pesticides in 10 samples.

**NOTABLE PERFORMANCE:**

**COMMENTS/CLARIFICATIONS  
REGION VI CLP QA REVIEW**

**CASE** 28507 **SDG** FGM63 **SITE** BPS Inc. **LAB** ATAS

The following is a summary of sample qualifiers used by Region 6 in reporting this CLP data:

<u>No.</u>	<u>Acceptable</u>	<u>Provisional</u>	<u>Unacceptable</u>
BNA	<u>20</u>	<u></u>	<u></u>
Pest/PCB	<u>4</u>	<u>16</u>	<u></u>

**COMMENTS:** This SDG consisted of 20 soil samples for RAS BNA and Pest/PCB analyses by CLP SOW OLM04.2. According to the OTR/COC Records, sample FGM64 was the QC sample, and samples FGM67/FGM68 (in SDG FGM68), FGM76/FGM77, and FGM83/FGM84 were field duplicate pairs. The CRQL's required %moisture correction for the soil samples and additional dilution correction for the diluted samples. The corrected CRQL's were reported by the laboratory and are referred to as sample quantitation limits (SQL's) in this report. The BNA samples were all analyzed at the low level. The data package contained the following contractually non-compliant items.

- The laboratory failed to dilute and reanalyze two Pest/PCB samples with target analyte peak responses exceeding the contractual upper limits on one column.
- The data package arrived 4 working days late for the contractual 14-day turnaround requirement.

**BNA** The only target analyte reported at a concentration above the SQL was hexachlorobenzene in sample FG-M64. Sample FG-M66 had IS areas exceeding the QC limits. The sample was reanalyzed and had the same problem, demonstrating matrix effects. The original data were recommended for use.

**Pest/PCB** Many pesticides and/or toxaphene were reported at concentrations above the SQL's in 16 samples. Samples FG-M63, FG-M64, FG-M65, FG-M67, FG-M72, FG-M73, FG-M75, FG-M78, and FG-M79 contain high concentrations of DDE, DDT, and/or toxaphene. The high DDT and/or DDE concentrations required the analyst to reanalyze samples FG-M67, FG-M73, and FG-M78 at a dilution (up to 20X).

Some results were qualified for 16 Pest/PCB samples because of problems with laboratory contamination, MS/MSD performance, inconsistent field duplicate results, and compound quantitation. The technical usability of all reported sample results is indicated by ESAT's final data qualifiers in the Data Summary Table. An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the audit results were reported on the Evidence Inventory Checklist.

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CASE 28507 SDG FGM63 SITE BPS Inc. LAB ATAS

heptachlor, endosulfan II, DDD, methoxychlor, and endrin ketone in sample FG-M71;

heptachlor in samples FG-M72, FG-M73, and FG-M79;

heptachlor, dieldrin, and endosulfan II in sample FG-M74;

δ-BHC in samples FG-M75 and FG-M78;

δ-BHC, heptachlor, dieldrin, endosulfan II, DDD, DDT, and γ-chlordane in sample FG-M81; and

δ-BHC, heptachlor, DDT, and toxaphene in sample FG-M85.

Results below the SQL's for the following analytes are biased high because of laboratory contamination:

toxaphene in sample FG-M65;

δ-BHC, dieldrin, endrin ketone, and γ-chlordane in sample FG-M66;

δ-BHC, dieldrin, DDT, and γ-chlordane in sample FG-M71;

δ-BHC in samples FG-M72, FG-M73, and FG-M79; and

DDD and DDT in sample FG-M74.

The DDT result above the SQL is biased high for sample FG-M84 because of laboratory contamination.

The reviewer did not assign a bias flag to the toxaphene result in sample FG-M67 because of a contradictory bias resulting from the field duplicate evaluation (see sec. 7).

**5. System Monitoring Compounds (SMC's)/Surrogates:** Acceptable. The surrogate recoveries were within the QC limits with the following exceptions. The TCX and/or DCB recoveries exceeded the QC limits on one column or both columns for samples FG-M64, FG-M64MS, and FG-M64MSD. The reviewer verified that the high recoveries were caused by coeluting matrix interferences, so no results were qualified.

**6. Matrix Spike/Matrix Spike Duplicate (MS/MSD):** Provisional. The MS/MSD results met the QC criteria for precision and %recovery with the following exceptions.

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**CASE** 28507 **SDG** FGM63 **SITE** BPS Inc. **LAB** ATAS

**NOTE:** THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL ISSUES (BASED ON THE STATEMENT OF WORK) AND TECHNICAL ISSUES (BASED ON THE NATIONAL FUNCTIONAL GUIDELINES). THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS. THE ASSESSMENTS ARE DEFINED BELOW.

Acceptable = No results were qualified for any problem associated with this QC parameter.  
Provisional = Some results were qualified because of problems associated with this QC parameter.  
Unusable = All results are unusable because of major problems associated with this QC parameter.

**1. Holding Times:** Acceptable. All samples met contractual holding time criteria. No technical holding time criteria exist for soil samples.

**2. Tuning/Performance:** Acceptable. DFTPP analyses met GC/MS tuning criteria. The Pest/PCB analyses met instrument performance guidelines.

**3. Calibrations:** Acceptable. All calibrations met contractual criteria. Several BNA target analytes failed technical %RSD and/or %D calibration criteria, but data qualification was unnecessary because these compounds were not reported at concentrations above the SQL's in the associated samples.

**4. Blanks:** Provisional. The method and instrument blanks met contractual requirements.

**BNA** Di-n-butylphthalate and di-n-octylphthalate were detected at concentrations below the CRQL's in the method blanks. All laboratory "B"-flagged results below the SQL's for these two compounds should be considered as undetected (U).

**Pest/PCB** Heptachlor,  $\delta$ -BHC, dieldrin, endosulfan II, DDD, endosulfan sulfate, DDT,  $\alpha$ -chlordane,  $\gamma$ -chlordane and/or toxaphene were detected at concentrations below the CRQL's in the method blanks. Results below the SQL's for the following analytes should be considered as undetected (U) because of laboratory contamination:

$\delta$ -BHC and heptachlor in samples FG-M65, FG-M67, FG-M76, FG-M77, FG-M80, FG-M82, FG-M83, and FG-M84;

heptachlor, endosulfan II, and methoxychlor in sample FG-M66;



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**CASE** 28507 **SDG** FGM63 **SITE** BPS Inc. **LAB** ATAS

**BNA** The MS recovery for 2,4-dinitrotoluene exceeded the QC limit, but data qualification was unnecessary because this compound was not detected in the unspiked sample.

**Pest/PCB** Heptachlor, aldrin, dieldrin, and DDT had outlying MS recoveries and/or %RPD's. The reviewer qualified the results above the SQL's as estimated for aldrin, dieldrin, and DDT in the unspiked sample FG-M64 because of the outlying MS/MSD performance.

**7. Other QC:**

**Field duplicates:** Provisional. The results for the field duplicates were consistent with one exception. The toxaphene concentrations differed by a factor of 4 for field duplicate samples FG-M67 and FG-M68 (SDG FGM68). The reviewer qualified the toxaphene concentration for sample FG-M67 as estimated, but did not assign a bias flag because of a contradictory bias resulting from the laboratory contamination (see sec. 4). The qualification for the toxaphene concentration in sample FG-M68 (estimated and biased high) is addressed in the review report for SDG FGM68.

**8. Internal Standards (IS):** Acceptable. Internal standard performance met the QC criteria for the BNA sample and QC analyses with the following exceptions. BNA sample FG-M66 had IS areas exceeding the QC limits. The sample was reanalyzed and had the same problem, demonstrating matrix effects. Data qualification was unnecessary per Region 6 guidelines because no compounds were reported at concentrations above the SQL's in this sample. Sample FG-M64MS also had a high IS1 area, but data qualification was unnecessary because the IS1 area only marginally exceeded the QC limit.

**9. Compound Identity/Quantitation:** Provisional.

**BNA** The only target analyte reported at a concentration above the SQL was hexachlorobenzene in sample FG-M64. The detected analytes met compound identification criteria.

**Pest/PCB** DDE, DDD, DDT, and/or toxaphene were reported at concentrations above the SQL's in 16 samples. Besides these four analytes, several other pesticides were also reported at concentrations above the SQL's in samples FG-M63 and FG-M64. Samples FG-M63, FG-M64, FG-M65, FG-M67, FG-M72, FG-M73, FG-M75, FG-M78, and FG-M79 contain high concentrations of DDE, DDT, and/or toxaphene. The high DDT and/or DDE concentrations required the analyst to reanalyze samples FG-M67, FG-M73, and



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CASE 28507 SDG FGM63 SITE BPS Inc. LAB ATAS

FG-M78 at a dilution (up to 20X). The retention times were outside the windows on one column for heptachlor epoxide in sample FG-M71 and  $\gamma$ -BHC in sample FG-M64MSD. However, the concentration for heptachlor epoxide was less than 10 percent of the SQL in sample FG-M71, and the reviewer raised the low concentration to the SQL and "U"-flagged it. The reviewer verified that the retention time outside the window for  $\gamma$ -BHC in sample FG-M64MSD on column RTX-CLPII was due to matrix interferences. Therefore, no data qualification was necessary. The other detected analytes met compound identification criteria. GC/MS confirmation is not required for the reported Pest/PCB results except DDT in sample FG-M78. The BNA TIC data for sample FG-M78 confirmed the DDT identification.

Coeluting toxaphene peaks interfered with the identification of many pesticides on one or both columns. The analyst deleted those pesticide results which were false positives due to interfering toxaphene peaks. The reviewer qualified the DDD results above the SQL's as estimated and biased high in samples FG-M67 and FG-M80 because of the coeluting toxaphene interferences.

The laboratory reported extremely low concentrations (less than 10 percent of the SQL's) for many pesticides. The reviewer raised these low concentrations to the SQL's and "U"-flagged them following the Region 6 guidelines. All laboratory "P"-flagged results that were above SQL's were qualified as estimated because two-column quantitation results differed by more than 25 percent.

**10. Performance/Completeness:** Acceptable. The laboratory submitted the revised Form 1 (page 796) for Pest/PCB sample FG-M64 in response to the CCS report. The resubmission was reviewed and the resubmitted page was used to replace the original one in the CSF package. The data package was complete but contained some omissions. The laboratory was contacted for the needed resubmission (see FAX Record Log).

**11. Overall Assessment:** Data are acceptable for all BNA and four Pest/PCB samples.

**Pest/PCB** Some results were qualified for the following samples because of problems with laboratory contamination, MS/MSD performance, inconsistent field duplicate results, and compound quantitation:

FG-M63, FG-M64, FG-M65, FG-M66, FG-M67, FG-M71, FG-M72,  
FG-M73, FG-M74, FG-M76, FG-M78, FG-M79, FG-M80, FG-M82,  
FG-M83, and FG-M84.

## ORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

- U Not detected at reported quantitation limit.
- N Identification is tentative.
- J Estimated value.
- L Reported concentration is below the CRQL.
- M Reported concentration should be used as a raised quantitation limit because of interferences and/or laboratory contamination.
- R Unusable.
- ^ High biased. Actual concentration may be lower than the concentration reported.
- v Low biased. Actual concentration may be higher than the concentration reported.
- F+ A false positive exists.
- F- A false negative exists.
- B This result may be high biased because of laboratory/field contamination. The reported concentration is above 5X or 10X the concentration reported in the method/field blank.
- UJ Estimated quantitation limit.
- T Identification is questionable because of absence of other commonly coexisting pesticides.
- \* Result not recommended for use because of associated QA/QC performance inferior to that from other analysis.

## ORGANIC DATA SUMMARY

Case No. : 28507

SDG : FGM63

Reviewer : Y. Hsieh

Laboratory : ATAS

Matrix : Soil

Units : ug/Kg

SEMIVOLATILE EPA SAMPLE NUMBER :	FLAG FG-M63	FLAG FG-M64	FLAG FG-M65	FLAG FG-M66	FLAG FG-M66RE	FLAG FG-M67	FLAG FG-M71
Benzaldehyde	380 U	180 LJ	380 U	420 U	420 U*	390 U	380 U
Phenol	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
bis-(2-Chloroethyl) ether	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
2-Chlorophenol	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
2-Methylphenol	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
2,2'-oxybis(1-Chloropropane)	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Acetophenone	380 U	140 LJ	380 U	420 U	420 U*	390 U	380 U
4-Methylphenol	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
N-Nitroso-di-n-propylamine	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Hexachloroethane	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Nitrobenzene	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Isophorone	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
2-Nitrophenol	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
2,4-Dimethylphenol	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
bis(2-Chloroethoxy)methane	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
2,4-Dichlorophenol	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Naphthalene	380 U	51 LJ	380 U	420 U	420 U*	390 U	380 U
4-Chloroaniline	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Hexachlorobutadiene	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Caprolactam	380 U	50 LJ	380 U	420 U	420 U*	22 LJ	380 U
4-Chloro-3-methylphenol	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
2-Methylnaphthalene	380 U	110 LJ	380 U	420 U	420 U*	390 U	62 LJ
Hexachlorocyclopentadiene	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
2,4,6-Trichlorophenol	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
2,4,5-Trichlorophenol	970 U	1100 U	950 U	1100 U	1100 U*	980 U	970 U
1,1'-Biphenyl	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
2-Chloronaphthalene	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
2-Nitroaniline	970 U	1100 U	950 U	1100 U	1100 U*	980 U	970 U
Dimethylphthalate	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
2,6-Dinitrotoluene	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Acenaphthylene	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
3-Nitroaniline	970 U	1100 U	950 U	1100 U	1100 U*	980 U	970 U
Acenaphthene	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
2,4-Dinitrophenol	970 U	1100 U	950 U	1100 U	1100 U*	980 U	970 U
4-Nitrophenol	970 U	1100 U	950 U	1100 U	1100 U*	980 U	970 U
Dibenzofuran	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
2,4-Dinitrotoluene	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Diethylphthalate	24 LJ	35 LJ	380 U	420 U	420 U*	22 LJ	380 U
Fluorene	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
4-Chlorophenyl-phenyl ether	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
4-Nitroaniline	970 U	1100 U	950 U	1100 U	1100 U*	980 U	970 U
4,6-Dinitro-2-methylphenol	970 U	1100 U	950 U	1100 U	1100 U*	980 U	970 U
N-Nitrosodiphenylamine	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
4-Bromophenyl-phenylether	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Hexachlorobenzene	380 U	2300	380 U	420 U	420 U*	390 U	380 U
Atrazine	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Pentachlorophenol	970 U	1100 U	950 U	1100 U	1100 U*	980 U	970 U
Phenanthrene	380 U	28 LJ	380 U	420 U	420 U*	390 U	380 U
Anthracene	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Carbazole	380 U	420 U	380 U	420 U	420 U*	390 U	360 U

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

**ORGANIC DATA SUMMARY**

Case No. : 28507

SDG : FGM63

Reviewer : Y. Hsieh

Laboratory : ATAS

Matrix : Soil

Units : ug/Kg

SEMIVOLATILE EPA SAMPLE NUMBER :	FLAG FG-M63	FLAG FG-M64	FLAG FG-M65	FLAG FG-M66	FLAG FG-M66RE	FLAG FG-M67	FLAG FG-M71
Di-n-butylphthalate	27 LJ	34 LJ	22 LJ	420 U	420 U*	29 LJ	23 LJ
Fluoranthene	20 LJ	420 U	380 U	420 U	420 U*	390 U	380 U
Pyrene	20 LJ	420 U	21 LJ	420 U	420 U*	390 U	380 U
Butylbenzylphthalate	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
3,3'-Dichlorobenzidine	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Benzo(a)anthracene	380 U	35 LJ	380 U	420 U	420 U*	390 U	380 U
Chrysene	20 LJ	75 LJ	380 U	420 U	420 U*	390 U	380 U
bis(2-Ethylhexyl)phthalate	91 LJ	420 U	380 U	420 U	420 U*	390 U	380 U
Di-n-octylphthalate	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Benzo(b)fluoranthene	380 U	420 U	38 LJ	420 U	420 U*	390 U	380 U
Benzo(k)fluoranthene	380 U	33 LJ	23 LJ	420 U	420 U*	390 U	380 U
Benzo(a)pyrene	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Indeno(1,2,3-cd)pyrene	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Dibenzo(a,h)anthracene	380 U	37 LJ	380 U	420 U	420 U*	390 U	32 LJ
Benzo(g,h,i)perylene	380 U	420 U	380 U	420 U	420 U*	390 U	380 U
Sample wt (g) :	30	30	30	30	30	30	30
%Moisture :	14	22	13	21	21	15	14
Dilution Factor :	1	1	1	1	1	1	1
Level :	Low	Low	Low	Low	Low	Low	Low
Number of TIC's :	26	30	14	13	14	14	20

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

## ORGANIC DATA SUMMARY

Case No. : 28507

SDG : FGM63

Reviewer : Y. Hsieh

Laboratory : ATAS

Matrix : Soil

Units : ug/Kg

SEMIVOLATILE EPA SAMPLE NUMBER :	FLAG FG-M72	FLAG FG-M73	FLAG FG-M74	FLAG FG-M75	FLAG FG-M76	FLAG FG-M77	FLAG FG-M78
Benzaldehyde	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Phenol	360 U	360 U	400 U	350 U	380 U	380 U	350 U
bis-(2-Chloroethyl) ether	360 U	360 U	400 U	350 U	380 U	380 U	350 U
2-Chlorophenol	360 U	360 U	400 U	350 U	380 U	380 U	350 U
2-Methylphenol	360 U	360 U	400 U	350 U	380 U	380 U	350 U
2,2'-oxybis(1-Chloropropane)	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Acetophenone	360 U	360 U	400 U	350 U	380 U	380 U	350 U
4-Methylphenol	360 U	360 U	400 U	350 U	380 U	380 U	350 U
N-Nitroso-di-n-propylamine	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Hexachloroethane	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Nitrobenzene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Isophorone	360 U	360 U	400 U	350 U	380 U	380 U	350 U
2-Nitrophenol	360 U	360 U	400 U	350 U	380 U	380 U	350 U
2,4-Dimethylphenol	360 U	360 U	400 U	350 U	380 U	380 U	350 U
bis(2-Chloroethoxy)methane	360 U	360 U	400 U	350 U	380 U	380 U	350 U
2,4-Dichlorophenol	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Naphthalene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
4-Chloroaniline	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Hexachlorobutadiene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Caprolactam	360 U	360 U	400 U	350 U	380 U	380 U	350 U
4-Chloro-3-methylphenol	360 U	360 U	400 U	350 U	380 U	380 U	350 U
2-Methylnaphthalene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Hexachlorocyclopentadiene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
2,4,6-Trichlorophenol	360 U	360 U	400 U	350 U	380 U	380 U	350 U
2,4,5-Trichlorophenol	910 U	900 U	1000 U	890 U	940 U	940 U	870 U
1,1'-Biphenyl	360 U	360 U	400 U	350 U	380 U	380 U	350 U
2-Chloronaphthalene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
2-Nitroaniline	910 U	900 U	1000 U	890 U	940 U	940 U	870 U
Dimethylphthalate	360 U	360 U	400 U	350 U	380 U	380 U	350 U
2,6-Dinitrotoluene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Acenaphthylene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
3-Nitroaniline	910 U	900 U	1000 U	890 U	940 U	940 U	870 U
Acenaphthene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
2,4-Dinitrophenol	910 U	900 U	1000 U	890 U	940 U	940 U	870 U
4-Nitrophenol	910 U	900 U	1000 U	890 U	940 U	940 U	870 U
Dibenzofuran	360 U	360 U	400 U	350 U	380 U	380 U	350 U
2,4-Dinitrotoluene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Diethylphthalate	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Fluorene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
4-Chlorophenyl-phenyl ether	360 U	360 U	400 U	350 U	380 U	380 U	350 U
4-Nitroaniline	910 U	900 U	1000 U	890 U	940 U	940 U	870 U
4,6-Dinitro-2-methylphenol	910 U	900 U	1000 U	890 U	940 U	940 U	870 U
N-Nitrosodiphenylamine	360 U	360 U	400 U	350 U	380 U	380 U	350 U
4-Bromophenyl-phenylether	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Hexachlorobenzene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Atrazine	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Pentachlorophenol	910 U	900 U	1000 U	890 U	940 U	940 U	870 U
Phenanthrene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Anthracene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Carbazole	360 U	360 U	400 U	350 U	380 U	380 U	350 U

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.



**ORGANIC DATA SUMMARY**

Case No. : 28507

SDG : FGM63

Reviewer : Y. Hsieh

Laboratory : ATAS

Matrix : Soil

Units : ug/Kg

SEMIVOLATILE EPA SAMPLE NUMBER :	FLAG FG-M72	FLAG FG-M73	FLAG FG-M74	FLAG FG-M75	FLAG FG-M76	FLAG FG-M77	FLAG FG-M78
Di-n-butylphthalate	19 LJ	24 LJ	21 LJ	350 U	380 U	380 U	350 U
Fluoranthene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Pyrene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Butylbenzylphthalate	360 U	360 U	400 U	350 U	380 U	380 U	350 U
3,3'-Dichlorobenzidine	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Benzo(a)anthracene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Chrysene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
bis(2-Ethylhexyl)phthalate	230 LJ	290 LJ	400 U	350 U	380 U	380 U	350 U
Di-n-octylphthalate	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Benzo(b)fluoranthene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Benzo(k)fluoranthene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Benzo(a)pyrene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Indeno(1,2,3-cd)pyrene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Dibenzo(a,h)anthracene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Benzo(g,h,i)perylene	360 U	360 U	400 U	350 U	380 U	380 U	350 U
Sample wt (g) :	30	30	30	30	30	30	30
%Moisture :	9	8	17	7	12	12	5
Dilution Factor :	1	1	1	1	1	1	1
Level :	Low	Low	Low	Low	Low	Low	Low
Number of TIC's :	8	10	12	9	14	10	12

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

## ORGANIC DATA SUMMARY

Case No. : 28507

SDG : FGM63

Reviewer : Y. Hsieh

Laboratory : ATAS

Matrix : Soil

Units : ug/Kg

SEMIVOLATILE EPA SAMPLE NUMBER :	FLAG FG-M79	FLAG FG-M80	FLAG FG-M81	FLAG FG-M82	FLAG FG-M83	FLAG FG-M84	FLAG FG-M85
Benzaldehyde	50 LJ	410 U	53 LJ	390 U	390 U	390 U	410 U
Phenol	490 U	410 U	430 U	390 U	390 U	390 U	410 U
bis-(2-Chloroethyl) ether	490 U	410 U	430 U	390 U	390 U	390 U	410 U
2-Chlorophenol	490 U	410 U	430 U	390 U	390 U	390 U	410 U
2-Methylphenol	490 U	410 U	430 U	390 U	390 U	390 U	410 U
2,2'-oxybis(1-Chloropropane)	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Acetophenone	39 LJ	22 LJ	430 U	390 U	390 U	390 U	410 U
4-Methylphenol	490 U	410 U	430 U	390 U	390 U	390 U	410 U
N-Nitroso-di-n-propylamine	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Hexachloroethane	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Nitrobenzene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Isophorone	490 U	410 U	430 U	390 U	390 U	390 U	410 U
2-Nitrophenol	490 U	410 U	430 U	390 U	390 U	390 U	410 U
2,4-Dimethylphenol	490 U	410 U	430 U	390 U	390 U	390 U	410 U
bis(2-Chloroethoxy)methane	490 U	410 U	430 U	390 U	390 U	390 U	410 U
2,4-Dichlorophenol	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Naphthalene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
4-Chloroaniline	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Hexachlorobutadiene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Caprolactam	490 U	410 U	430 U	390 U	390 U	390 U	410 U
4-Chloro-3-methylphenol	490 U	410 U	430 U	390 U	390 U	390 U	410 U
2-Methylnaphthalene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Hexachlorocyclopentadiene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
2,4,6-Trichlorophenol	490 U	410 U	430 U	390 U	390 U	390 U	410 U
2,4,5-Trichlorophenol	1200 U	1000 U	1100 U	990 U	980 U	990 U	1000 U
1,1'-Biphenyl	490 U	410 U	430 U	390 U	390 U	390 U	410 U
2-Chloronaphthalene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
2-Nitroaniline	1200 U	1000 U	1100 U	990 U	980 U	990 U	1000 U
Dimethylphthalate	490 U	410 U	430 U	390 U	390 U	390 U	410 U
2,6-Dinitrotoluene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Acenaphthylene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
3-Nitroaniline	1200 U	1000 U	1100 U	990 U	980 U	990 U	1000 U
Acenaphthene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
2,4-Dinitrophenol	1200 U	1000 U	1100 U	990 U	980 U	990 U	1000 U
4-Nitrophenol	1200 U	1000 U	1100 U	990 U	980 U	990 U	1000 U
Dibenzofuran	490 U	410 U	430 U	390 U	390 U	390 U	410 U
2,4-Dinitrotoluene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Diethylphthalate	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Fluorene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
4-Chlorophenyl-phenyl ether	490 U	410 U	430 U	390 U	390 U	390 U	410 U
4-Nitroaniline	1200 U	1000 U	1100 U	990 U	980 U	990 U	1000 U
4,6-Dinitro-2-methylphenol	1200 U	1000 U	1100 U	990 U	980 U	990 U	1000 U
N-Nitrosodiphenylamine	490 U	410 U	430 U	390 U	390 U	390 U	410 U
4-Bromophenyl-phenylether	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Hexachlorobenzene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Atrazine	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Pentachlorophenol	1200 U	1000 U	1100 U	990 U	980 U	990 U	1000 U
Phenanthrene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Anthracene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Carbazole	490 U	410 U	430 U	390 U	390 U	390 U	410 U

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

## ORGANIC DATA SUMMARY

Case No. : 28507

SDG : FGM63

Reviewer : Y. Hsieh

Laboratory : ATAS

Matrix : Soil

Units : ug/Kg

SEMIVOLATILE EPA SAMPLE NUMBER :	FLAG FG-M79	FLAG FG-M80	FLAG FG-M81	FLAG FG-M82	FLAG FG-M83	FLAG FG-M84	FLAG FG-M85
Di-n-butylphthalate	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Fluoranthene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Pyrene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Butylbenzylphthalate	490 U	410 U	430 U	390 U	390 U	390 U	410 U
3,3'-Dichlorobenzidine	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Benzo(a)anthracene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Chrysene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
bis(2-Ethylhexyl)phthalate	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Di-n-octylphthalate	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Benzo(b)fluoranthene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Benzo(k)fluoranthene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Benzo(a)pyrene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Indeno(1,2,3-cd)pyrene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Dibenzo(a,h)anthracene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Benzo(g,h,i)perylene	490 U	410 U	430 U	390 U	390 U	390 U	410 U
Sample wt (g) :	30	30	30	30	30	30	30
%Moisture :	32	20	23	16	15	16	20
Dilution Factor :	1	1	1	1	1	1	1
Level :	Low	Low	Low	Low	Low	Low	Low
Number of TIC's :	30	15	25	16	10	8	12

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.



## ORGANIC DATA SUMMARY

Case No. : 28507

SDG : FGM63

Reviewer : Y. Hsieh

Laboratory : ATAS

Matrix : Soil

Units : ug/Kg

PESTICIDES/PCBs EPA SAMPLE NUMBER :	FLAG FG-M63	FLAG FG-M64	FLAG FG-M65	FLAG FG-M66	FLAG FG-M67	FLAG FG-M67DL	FLAG FG-M71
alpha-BHC	0.52 LJ	4.0 J	2.0 U	2.2 U	2.0 U	3.7 U *	2.0 U
beta-BHC	6.5 J	24 J	0.26 LJ	2.2 U	0.21 LJ	3.7 U *	2.0 U
delta-BHC	2.0 U	2.2 U	2.0 U	0.57 LJB	2.0 U	3.7 U *	0.69 LJB
gamma-BHC (Lindane)	2.0 U	2.2 U	2.0 U	2.2 U	2.0 U	3.7 U *	2.0 U
Heptachlor	3.5 J	2.2 U	2.0 U	2.2 U	2.0 U	0.19 *	2.0 U
Aldrin	0.56 LJ	6.1 J	2.0 U	2.2 U	2.0 U	3.7 U *	2.0 U
Heptachlor epoxide	0.69 LJ	2.2 U	2.0 U	0.25 LJ	2.0 U	3.7 U *	2.0 U
Endosulfan I	1.2 LJ	18 J	2.0 U	2.2 U	2.0 U	3.7 U *	2.0 U
Dieldrin	0.46 LJ	5.0 J	3.8 U	0.65 LJB	3.9 U	7.2 U *	0.58 LJB
4,4'-DDE	24	27 J	28 J	4.7	34 J	29 *	0.82 LJ
Endrin	3.8 U	4.2 U	3.8 U	4.2 U	3.9 U	7.2 U *	3.8 U
Endosulfan II	3.3 LJ	15 J	3.8 U	4.2 U	3.9 U	7.2 U *	3.8 U
4,4'-DDD	8.6	18 J	9.8	1.7 LJ	6.7 J^	5.9 *	3.8 U
Endosulfan sulfate	5.7 J	20	3.8 U	0.71 LJ	3.9 U	7.2 U *	0.74 LJ
4,4'-DDT	44 J	53 J	50	9.5	61 *	52	3.1 LJB
Methoxychlor	4.5 LJ	18 LJ	20 U	22 U	20 U	37 U *	20 U
Endrin ketone	2.7 LJ	5.8	3.8 U	0.66 LJB	3.9 U	7.2 U *	3.8 U
Endrin aldehyde	1.7 LJ	16 J	3.8 U	1.4 LJ	3.9 U	7.2 U *	0.94 LJ
alpha-Chlordane	2.0 U	2.2 U	2.0 U	0.33 LJ	2.0 U	3.7 U *	0.35 LJ
gamma-Chlordane	1.7 LJ	16 J	2.0 U	1.1 LJB	2.0 U	3.7 U *	0.73 LJB
Toxaphene	200 U	220 U	130 LJB	220 U	140 LJ	120 *	200 U
Aroclor-1016	38 U	42 U	38 U	42 U	39 U	72 U *	38 U
Aroclor-1221	78 U	86 U	77 U	85 U	79 U	150 U *	78 U
Aroclor-1232	38 U	42 U	38 U	42 U	39 U	72 U *	38 U
Aroclor-1242	38 U	42 U	38 U	42 U	39 U	72 U *	38 U
Aroclor-1248	38 U	42 U	38 U	42 U	39 U	72 U *	38 U
Aroclor-1254	38 U	42 U	38 U	42 U	39 U	72 U *	38 U
Aroclor-1260	38 U	42 U	38 U	42 U	39 U	72 U *	38 U
Sample wt (g) :	30	30	30	30	30	30	30
%Moisture :	14	22	13	21	15	8	14
Dilution Factor :	1	1	1	1	1	2	1

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

### ORGANIC DATA SUMMARY

Case No. : 28507

SDG : FGM63

Reviewer : Y. Hsieh

Laboratory : ATAS

Matrix : Soil

Units : ug/Kg

PESTICIDES/PCBs	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER :	FG-M72	FG-M73	FG-M73DL	FG-M74	FG-M75	FG-M76	FG-M77
alpha-BHC	1.9 U	1.8 U	5.5 U *	2.0 U	1.9 U	1.9 U	1.9 U
beta-BHC	1.9 U	1.8 U	5.5 U *	2.0 U	1.9 U	1.9 U	1.9 U
delta-BHC	0.47 LJB	0.46 LJB	3.7 *	2.0 U	1.9 U	1.9 U	1.9 U
gamma-BHC (Lindane)	1.9 U	1.8 U	5.5 U *	2.0 U	1.9 U	1.9 U	1.9 U
Heptachlor	1.9 U	1.8 U	5.5 U *	2.0 U	1.9 U	1.9 U	1.9 U
Aldrin	1.9 U	1.8 U	0.34 *	2.0 U	1.9 U	1.9 U	1.9 U
Heptachlor epoxide	1.9 U	1.8 U	5.5 U *	2.0 U	1.9 U	1.9 U	1.9 U
Endosulfan I	1.9 U	1.8 U	5.5 U *	2.0 U	1.9 U	1.9 U	1.9 U
Dieldrin	3.6 U	3.6 U	11 U *	4.0 U	3.8 U	3.8 U	3.8 U
4,4'-DDE	24	52 *	59	2.1 LJ	13	3.4 LJ	4.3
Endrin	3.6 U	3.6 U	11 U *	4.0 U	3.8 U	3.8 U	3.8 U
Endosulfan II	3.6 U	3.6 U	11 U *	4.0 U	3.8 U	3.8 U	3.8 U
4,4'-DDD	3.6 U	3.6 U	11 U *	1.4 LJB	3.8 U	3.8 U	3.8 U
Endosulfan sulfate	3.6 U	3.6 U	11 U *	4.0 U	3.8 U	3.8 U	3.8 U
4,4'-DDT	42	110 *	120	3.5 LJB	29	7.0 J	11
Methoxychlor	19 U	18 U	55 U *	13 LJ	19 U	19 U	19 U
Endrin ketone	3.6 U	3.6 U	11 U *	4.0 U	3.8 U	3.8 U	3.8 U
Endrin aldehyde	3.6 U	3.6 U	11 U *	0.86 LJ	3.8 U	3.8 U	3.8 U
alpha-Chlordane	1.9 U	1.8 U	5.5 U *	0.29 LJ	1.9 U	1.9 U	1.9 U
gamma-Chlordane	1.9 U	1.8 U	5.5 U *	2.0 U	1.9 U	1.9 U	1.9 U
Toxaphene	88 LJ	260	280 *	200 U	52 LJ	63 LJ	46 LJ
Aroclor-1016	36 U	36 U	110 U *	40 U	38 U	38 U	38 U
Aroclor-1221	74 U	73 U	220 U *	81 U	76 U	76 U	76 U
Aroclor-1232	36 U	36 U	110 U *	40 U	38 U	38 U	38 U
Aroclor-1242	36 U	36 U	110 U *	40 U	38 U	38 U	38 U
Aroclor-1248	36 U	36 U	110 U *	40 U	38 U	38 U	38 U
Aroclor-1254	36 U	36 U	110 U *	40 U	38 U	38 U	38 U
Aroclor-1260	36 U	36 U	110 U *	40 U	38 U	38 U	38 U
Sample wt (g) :	30	30	30	30	30	30	30
%Moisture :	9	8	8	17	12	12	12
Dilution Factor :	1	1	3	1	1	1	1

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

**ORGANIC DATA SUMMARY**

Case No. : 28507

SDG : FGM63

Reviewer : Y. Hsieh

Laboratory : ATAS

Matrix : Soil

Units : ug/Kg

PESTICIDES/PCBs EPA SAMPLE NUMBER :	FLAG FG-M78	FLAG FG-M78DL	FLAG FG-M79	FLAG FG-M80	FLAG FG-M81	FLAG FG-M82	FLAG FG-M83
alpha-BHC	1.8 U	36 U *	0.41 LJ	2.1 U	2.2 U	2.0 U	2.0 U
beta-BHC	0.78 LJ	36 U *	0.50 LJ	2.1 U	2.2 U	2.0 U	2.0 U
delta-BHC	1.8 U	36 U *	1.1 LJ8	2.1 U	2.2 U	2.0 U	2.0 U
gamma-BHC (Lindane)	1.8 U	36 U *	2.5 U	2.1 U	2.2 U	2.0 U	2.0 U
Heptachlor	1.8 U	36 U *	2.5 U	2.1 U	2.2 U	2.0 U	2.0 U
Aldrin	1.8 U	36 U *	0.26 LJ	2.1 U	2.2 U	2.0 U	2.0 U
Heptachlor epoxide	1.8 U	36 U *	0.45 LJ	2.1 U	2.2 U	2.0 U	2.0 U
Endosulfan I	1.8 U	36 U *	1.1 LJ	2.1 U	2.2 U	2.0 U	2.0 U
Dieldrin	3.5 U	69 U *	0.93 LJ	4.1 U	4.3 U	3.9 U	3.9 U
4,4'-DDE	140 *	170	40	18	4.3 U	3.9 U	4.9
Endrin	3.5 U	69 U *	4.0 LJ	4.1 U	4.3 U	3.9 U	3.9 U
Endosulfan II	3.5 U	69 U *	3.2 LJ	4.1 U	4.3 U	3.9 U	3.9 U
4,4'-DDD	3.5 U	69 U *	6.1	6.2 J^	4.3 U	3.9 U	3.9 U
Endosulfan sulfate	3.5 U	69 U *	1.0 LJ	4.1 U	0.47 LJ	3.9 U	3.9 U
4,4'-DDT	470 *	700	60	7.3 J	4.3 U	18 J	5.6 J
Methoxychlor	18 U	360 U *	4.0 LJ	21 U	5.9 LJ	20 U	20 U
Endrin ketone	3.5 U	69 U *	1.1 LJ	4.1 U	4.3 U	3.9 U	3.9 U
Endrin aldehyde	3.5 U	69 U *	4.1 LJ	4.1 U	0.44 LJ	3.9 U	3.9 U
alpha-Chlordane	1.8 U	36 U *	0.79 LJ	2.1 U	2.2 U	2.0 U	2.0 U
gamma-Chlordane	1.8 U	36 U *	0.73 LJ	2.1 U	2.2 U	2.0 U	2.0 U
Toxaphene	1400 J	1600 *	250 U	48 LJ	220 U	480	62 LJ
Aroclor-1016	35 U	690 U *	49 U	41 U	43 U	39 U	39 U
Aroclor-1221	71 U	1400 U *	99 U	84 U	87 U	80 U	79 U
Aroclor-1232	35 U	690 U *	49 U	41 U	43 U	39 U	39 U
Aroclor-1242	35 U	690 U *	49 U	41 U	43 U	39 U	39 U
Aroclor-1248	35 U	690 U *	49 U	41 U	43 U	39 U	39 U
Aroclor-1254	35 U	690 U *	49 U	41 U	43 U	39 U	39 U
Aroclor-1260	35 U	690 U *	49 U	41 U	43 U	39 U	39 U
Sample wt (g) :	30	30	30	30	30	30	30
%Moisture :	5	5	32	20	23	16	15
Dilution Factor :	1	20	1	1	1	1	1

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

## ORGANIC DATA SUMMARY

Case No. : 28507

SDG : FGM63

Reviewer : Y. Hsieh

Laboratory : ATAS

Matrix : Soil

Units : ug/Kg

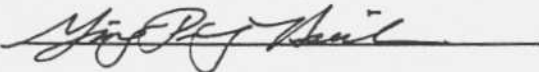
PESTICIDES/PCBs EPA SAMPLE NUMBER :	FLAG FG-M84	FLAG FG-M85	FLAG	FLAG	FLAG	FLAG	FLAG
alpha-BHC	2.0 U	2.1 U					
beta-BHC	2.0 U	2.1 U					
delta-BHC	2.0 U	2.1 U					
gamma-BHC (Lindane)	2.0 U	2.1 U					
Heptachlor	2.0 U	2.1 U					
Aldrin	2.0 U	2.1 U					
Heptachlor epoxide	2.0 U	2.1 U					
Endosulfan I	2.0 U	2.1 U					
Dieldrin	3.9 U	4.1 U					
4,4'-DDE	4.8 J	4.1 U					
Endrin	3.9 U	4.1 U					
Endosulfan II	3.9 U	4.1 U					
4,4'-DDD	3.9 U	4.1 U					
Endosulfan sulfate	3.9 U	4.1 U					
4,4'-DDT	9.9 JB	4.1 U					
Methoxychlor	20 U	21 U					
Endrin ketone	3.9 U	4.1 U					
Endrin aldehyde	3.9 U	4.1 U					
alpha-Chlordane	2.0 U	2.1 U					
gamma-Chlordane	2.0 U	2.1 U					
Toxaphene	220 J	210 U					
Aroclor-1016	39 U	41 U					
Aroclor-1221	80 U	84 U					
Aroclor-1232	39 U	41 U					
Aroclor-1242	39 U	41 U					
Aroclor-1248	39 U	41 U					
Aroclor-1254	39 U	41 U					
Aroclor-1260	39 U	41 U					
Sample wt (g) :	30	30					
%Moisture :	16	20					
Dilution Factor :	1	1					

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

# INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 28507 SDG No. FGM63 SDG Nos. To Follow \_\_\_\_\_ SAS No. \_\_\_\_\_ Date Rec 10/03/00

EPA Lab ID: <u>ATAS</u> Lab Location: <u>875 Fee Fee Road, Maryland heights, MO 63043</u> Region: <u>6</u> Audit No.: <u>28507/FGM63</u> Re_Submitted CSF? Yes _____ No <u>X</u> Box No(s): <u>1</u> COMMENTS: _____  Over for additional comments.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">ORIGINALS</th> <th style="text-align: center;">YES</th> <th style="text-align: center;">NO</th> <th style="text-align: center;">N/A</th> </tr> </thead> <tbody> <tr> <td><b>CUSTODY SEALS</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1. Present on package?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>2. Intact upon receipt?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>FORM DC-2</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3. Numbering scheme accurate?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>4. Are enclosed documents listed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>5. Are listed documents enclosed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>FORM DC-1</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>7. Complete?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>8. Accurate?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>CHAIN-OF-CUSTODY RECORD(s)</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>9. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>10. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>TRAFFIC REPORT(s) PACKING LIST(s)</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>11. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>12. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>AIRBILLS/AIRBILL STICKER</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>13. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>14. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>15. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>SAMPLE TAGS</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>16. Does DC-1 list tags as being included?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>17. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>OTHER DOCUMENTS</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>18. Complete?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>19. Legible?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>20. Original?</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>20a. If "NO", does the copy indicate where original documents are located?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> </tbody> </table>	ORIGINALS	YES	NO	N/A	<b>CUSTODY SEALS</b>				1. Present on package?	X			2. Intact upon receipt?	X			<b>FORM DC-2</b>				3. Numbering scheme accurate?	X			4. Are enclosed documents listed?	X			5. Are listed documents enclosed?	X			<b>FORM DC-1</b>				6. Present?	X			7. Complete?	X			8. Accurate?	X			<b>CHAIN-OF-CUSTODY RECORD(s)</b>				9. Signed?	X			10. Dated?	X			<b>TRAFFIC REPORT(s) PACKING LIST(s)</b>				11. Signed?	X			12. Dated?	X			<b>AIRBILLS/AIRBILL STICKER</b>				13. Present?	X			14. Signed?	X			15. Dated?	X			<b>SAMPLE TAGS</b>				16. Does DC-1 list tags as being included?	X			17. Present?	X			<b>OTHER DOCUMENTS</b>				18. Complete?	X			19. Legible?	X			20. Original?		X		20a. If "NO", does the copy indicate where original documents are located?	X		
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Audited by: <u></u> Audited by: _____ Audited by: _____	Ying-Ping Hsieh / ESAT Data Reviewer _____ _____	Date <u>10/13/00</u> Date _____ Date _____
Signature	Printed Name/Title	

TO BE COMPLETED BY CEAT		
Date Recvd by CEAT: _____	Date Entered: _____	Date Reviewed: _____
Entered by: _____	_____	_____
Reviewed by: _____	_____	_____
Signature	Printed Name/Title	

DC-2\_\_

In Reference to Case No(s):  
28507 SDG: FGM63 (O-2267)

Contract Laboratory Program  
REGIONAL/LABORATORY COMMUNICATION SYSTEM  
FAX Record Log

Laboratory Name: ATAS  
Lab Contact: Robert Wilhelm  
Region: 6  
Regional Contact: Mahmoud El-Feky - EPA  
ESAT Reviewer: Ying-Ping Hsieh - LMSG  
FAX initiated by:      Laboratory   X   Region

In reference to data for the following fractions:

Pest/PCB

Summary of Questions/Issues:

1. Please explain why the laboratory did not dilute and reanalyze samples FG-M63 and FG-M64 with  $\beta$ -BHC,  $\delta$ -BHC, endosulfan I, DDE, dieldrin, and/or endrin peak responses exceeding those in the high point Individual Mix A or Mix B standards in the initial calibration (OLM04.2, p. D-66/PEST, sec. 11.3.5).
2. The retention times were outside the windows on one column for heptachlor epoxide in sample FGM71 (page 1779) and  $\gamma$ -BHC in sample FGM64MSD (page 1770). Please comment and make the necessary resubmissions.

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 (OLM04.2, p. B-26, 2.7.3), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.



FAX COMMUNICATION LOG

Continuation Page 2  
Laboratory/Contact ATAS/Robert Wilhelm  
In Reference To Case No. 28507 SDG: FGM63

Please respond to the above items within 7 days to:

Mr. Mahmoud El-Feky  
U.S. EPA Region 6 Laboratory  
10625 Fallstone Road  
Houston, TX 77099

If you have any questions, please contact me at (281) 983-2128.

Mr. Mahmoud El-Feky  
Signature

10-18-00  
Date

Distribution: (1) Lab Copy, (2) Region Copy, and (3) ESAT Copy



United States Environmental Protection Agency  
Contract Laboratory Program

# Organic Traffic Report & Chain of Custody Record (For Organic CLP Analysis)

Case No.

28507

1. Project Code	Account Code	2. Region No. Sampling Co.	4. Date Shipped Carrier	6. Matrix (Enter in Column A)	7. Preservative (Enter in Column D)
		6. ADEQ	9/12/00 Fed Ex	1. Surface Water	1. HCl
Regional Information		Sampler (Name)	Airbill Number	2. Ground Water	2. HNO3
		Terry Sligh	82141334-0210	3. Leachate	3. NaHSO4
Non-Superfund Program		Sampler Signature	5. Ship To	4. Field QC	4. H2SO4
		[Signature]	ATAS	5. Soil/Sediment	5. Ice only
Site Name		3. Purpose	875 Fee Fee Road	6. Oil (High only)	6. Other
BPS, INC.		Early Action	Maryland Heights, MO	7. Waste	(Specify in Column D)
City, State	Site Spill ID	Lead	ATTN: Rich Mann	8. Other (Specify in Column A)	N. Not preserved
Helena, AR		Lead			

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc. Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 7)	E RAS Analysis			F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier
					VOA	BNA	Per/POB	High only ARO/TOX					B = Blank S = Spike D = Duplicate R = Pinstate PE = Perform Eval. -- = Not a QC Sample
FGM71	5	L	G	5	X	X			6-183867-68	SB02	9/12/00 10:03	MFTW 71	TS
FGM72	5	L	G	5	X	X			6-183870-71	SB03	9/12/00 8:56	MFTW 72	TS
FGM73	5	L	G	5	X	X			6-183873-74	SB04	9/12/00 10:28	MFTW 73	TS
FGM74	5	L	G	5	X	X			6-183876-77	SB05	9/12/00 10:55	MFTW 74	TS
FGM75	5	L	G	5	X	X			6-183879-80	SB06	9/12/00 9:07	MFTW 75	TS
FGM76	5	L	G	5	X	X			6-183882-83	SB07	9/12/00 11:27	MFTW 76	TS
FGM77	5	L	G	5	X	X			6-183885-86	SB08	9/12/00 11:27	MFTW 77	TS D of SB07
FGM78	5	L	G	5	X	X			6-183888-89	SB09	9/12/00 9:24	MFTW 78	TS

Shipment for Case Complete? (Y/N)	Page 2 of 3	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
			Vicky Prewett	

## CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[Signature]	9/12/00 1800	Fed Ex			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

DISTRIBUTION: Blue - Region Copy  
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(2/98)

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\*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

200756





United States Environmental Protection Agency  
Contract Laboratory Program

# Organic Traffic Report & Chain of Custody Record (For Organic CLP Analysis)

Case No.

28507

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier	6. Matrix (Enter in Column A)	7. Preservative (Enter in Column D)
		6	ADEQ	9/12/00	Fed Ex	1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)	1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved
Regional Information		Sampler (Name)		Airbill Number			
		Terry Slight		8214 1334-02			
Non-Superfund Program		Sampler Signature		5. Ship To			
		<i>[Signature]</i>		A.T.A.S. 875 Fee Fee Road Maryland Heights, MO 63043 ATTN: Rich Mannz			
Site Name		3. Purpose					
BPS, Inc.		Early Action Lead SF PRP ST FED		Long-Term Action CLEM PA REM RI SI ESI			
City, State		Site Spill ID					
Helena, AR		1					

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc. Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 7)	E RAS Analysis	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier
FGM 63	5	L	G	5	XX	6-199443-44	SS01	9/12/00 9:37	MFJW 63	T3	
FGM 64	5	L	G	5	XX	6-199446-47	SS02	9/12/00 9:52	MFJW 64	T3	
FGM 65	5	L	G	5	XX	6-199449-50	SS03	9/12/00 10:14	MFJW 65	T3	
FGM 66	5	L	G	5	XX	6-183852-53	SS04	9/12/00 10:45	MFJW 66	T3	
FGM 67	5	L	G	5	XX	6-183855-56	SS05	9/12/00 11:07	MFJW 67	T3	
FGM 68	5	L	G	5	XX	6-183858-59	SS06	9/12/00 11:07	MFJW 68	T3	Do of SS05
FGM 69	5	L	G	5	XX	6-183861-62	SS07	9/12/00 9:17	MFJW 69	T3	
FGM 70	5	L	G	5	XX	6-183864-65	SB01	9/12/00 9:43	MFJW 70	T3	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sample Signatures	Chain of Custody Seal Number(s)
(Y)	1 of 3	FGM 64, FGM 69	<i>[Signature]</i>	

## CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
<i>[Signature]</i>	9/12/00 1800	Fed Ex			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

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EPA Form 9110-2  
(2/98)

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS  
\*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

382757



United States Environmental Protection Agency  
Contract Laboratory Program

# Organic Traffic Report & Chain of Custody Record (For Organic CLP Analysis)

Case No.

28507

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier	6. Matrix (Enter in Column A)	7. Preservative (Enter in Column D)
		6	ADFQ	9/12/00	Fed Ex	1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)	1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved
Regional Information		3. Sampler (Name)		Airbill Number			
		Terry Slight		8214 1334-0210			
Non-Superfund Program		3. Purpose		5. Ship To			
		Early Action CLEM PA REM RI2 SI ESI		ATTAS 875 Fee Fee Road Maryland Heights, Mo 63043 ATTN: Rich Mannz			
Site Name		Lead					
BPS, Inc.		SF PRP ST FED					
City, State		Site Spill ID					
Helena, AR							

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc. Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 7)	E RAS Analysis			F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier
					VOA	BNA	Pest/PCB	High only ARO/TOX					
FGM 79	S	L	G	S	X	X			6-183891-92	SD01	9/12/00 13:41	MFTW 79	TS
FGM 80	S	L	G	S	X	X			6-183894-95	SD02	9/12/00 13:25	MFTW 80	TS
FGM 81	S	L	G	S	X	X			6-183897-98	SD03	9/12/00 13:39	MFTW 81	TS
FGM 82	S	L	G	S	X	X			6-183900-01	SD04	9/12/00 13:56	MFTW 82	TS
FGM 83	S	L	G	S	X	X			6-183903-04	SD05	9/12/00 14:17	MFTW 83	TS
FGM 84	S	L	G	S	X	X			6-183906-07	SD06	9/12/00 14:17	MFTW 84	TS
FGM 85	S	L	G	S	X	X			6-183909-10	SD07	9/12/00 14:53	MFTW 85	TS

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Y	3 of 3		Decky Jewett	

## CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
<i>[Signature]</i>	9/12/00 1800	<i>[Signature]</i>			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
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(2/98)

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS  
SEE REVERSE FOR PURPOSE CODE DEFINITIONS

382753

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM63

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.01

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8781.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 14 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Extraction: (Type) SONC  
CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Q

CAS NO. COMPOUND

100-52-7	Benzaldehyde	380	U
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl) ether	380	U
95-57-8	2-Chlorophenol	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
98-86-2	Acetophenone	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
105-60-2	Caprolactam	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	970	U
92-52-4	1,1'-Biphenyl	380	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	970	U
131-11-3	Dimethylphthalate	380	U
606-20-2	2,6-Dinitrotoluene	380	U
208-96-8	Acenaphthylene	380	U
99-09-2	3-Nitroaniline	970	U
83-32-9	Acenaphthene	380	U

000040



1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM63

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.01

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8781.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 14 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	970	U
100-02-7	4-Nitrophenol	970	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	24	J
86-73-7	Fluorene	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
100-01-6	4-Nitroaniline	970	U
534-52-1	4,6-Dinitro-2-methylphenol	970	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
1912-24-9	Atrazine	380	U
87-86-5	Pentachlorophenol	970	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	27	J
206-44-0	Fluoranthene	20	J
129-00-0	Pyrene	20	J
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	20	J
117-81-7	bis(2-Ethylhexyl)phthalate	91	J
117-84-0	Di-n-octylphthalate	72	BJ
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenz(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) Cannot be seperated from Diphenylamine

000041

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM63

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.01

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8781.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 14 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 7.1

Extraction: (Type) SONC

Number TICs found: 26

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.45	580	J
2.	UNKNOWN	4.62	1000	BJ
3.	UNKNOWN	5.08	460	J
4.	UNKNOWN	5.78	1300	J
5.	UNKNOWN	6.05	140	J
6. 445-03-4	BENZENAMINE, 4-CHLORO-2-(TRI	6.84	350	JN
7.	UNKNOWN	7.48	230	BJ
8.	UNKNOWN	7.53	270	BJ
9. 1897-45-6	TETRACHLOROISOPHTHALONITRILE	12.02	100	JN
10. 527-20-8	2,3,4,5,6-PENTACHLOROANILINE	12.35	170	JN
11.	UNKNOWN	13.53	360	J
12.	UNKNOWN	13.63	140	J
13.	UNKNOWN	14.19	120	J
14.	UNKNOWN	14.61	110	J
15.	UNKNOWN	14.98	88	J
16.	UNKNOWN	15.46	97	J
17.	UNKNOWN	16.36	89	J
18.	UNKNOWN	16.47	120	J
19.	UNKNOWN	16.78	120	J
20.	UNKNOWN	17.20	160	J
21.	UNKNOWN	17.48	110	BJ
22.	UNKNOWN	18.34	130	J
23.	UNKNOWN	19.45	140	J
24.	UNKNOWN	19.87	190	J
25.	UNKNOWN	20.33	130	J
26.	UNKNOWN	21.45	560	J
27.				
28.				
29.				
30.				

000042

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM64

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.02

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8800.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 22 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

100-52-7	Benzaldehyde	180	J
108-95-2	Phenol	420	U
111-44-4	bis(2-Chloroethyl) ether	420	U
95-57-8	2-Chlorophenol	420	U
95-48-7	2-Methylphenol	420	U
108-60-1	2,2'-oxybis(1-Chloropropane)	420	U
98-86-2	Acetophenone	140	J
106-44-5	4-Methylphenol	420	U
621-64-7	N-Nitroso-di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
91-20-3	Naphthalene	51	J
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
105-60-2	Caprolactam	50	J
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	110	J
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	1100	U
92-52-4	1,1'-Biphenyl	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	420	U
606-20-2	2,6-Dinitrotoluene	420	U
208-96-8	Acenaphthylene	420	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	420	U

000079

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: ATAS, INC

Contract: 68-W-00-066

FGM64

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.02

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8800.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 22 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Extraction: (Type) SONC  
CONCENTRATION UNITS:

CAS NO. COMPOUND

(ug/L or ug/Kg) UG/KG Q

51-28-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	35	J
86-73-7	Fluorene	420	U
7005-72-3	4-Chlorophenyl-phenylether	420	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	420	U
101-55-3	4-Bromophenyl-phenylether	420	U
118-74-1	Hexachlorobenzene	2300	U
1912-24-9	Atrazine	420	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	28	J
120-12-7	Anthracene	420	U
86-74-8	Carbazole	420	U
84-74-2	Di-n-butylphthalate	34	J
206-44-0	Fluoranthene	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	35	J
218-01-9	Chrysene	75	J
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	140	BJ
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	33	J
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenz(a,h)anthracene	37	J
191-24-2	Benzo(g,h,i)perylene	420	U

(1) Cannot be seperated from Diphenylamine

000080

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM64

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.02

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8800.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 22 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Extraction: (Type) SONC

Number TICs found: 30

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.58	840	BJ
2.	UNKNOWN	5.05	500	J
3.	UNKNOWN	5.75	490	J
4. 445-03-4	BENZENAMINE, 4-CHLORO-2-(TRI	6.81	400	JN
5.	UNKNOWN	7.46	280	BJ
6.	UNKNOWN	7.49	330	BJ
7. 130-15-4	1,4-NAPHTHALENEDIONE	9.20	2100	JN
8. 90-15-3	1-NAPHTHALENOL	9.86	2200	JN
9. 608-93-5	BENZENE, PENTACHLORO-	9.99	2500	JN
10.	UNKNOWN	10.51	560	J
11. 634-83-3	BENZENAMINE, 2,3,4,5-TETRACH	10.77	300	JN
12. 7320-53-8	DIBENZOFURAN, 4-METHYL-	11.01	300	JN
13. 82-68-8	BENZENE, PENTACHLORONITRO-	11.70	10000	JN
14. 527-20-8	2,3,4,5,6-PENTACHLOROANILINE	12.34	30000	JN
15.	UNKNOWN	12.41	280	J
16. 135-19-3	2-NAPHTHALENOL	12.56	4100	JN
17.	UNKNOWN	12.76	1200	J
18. 1825-19-0	PENTACHLOROTHIOANISOLE	12.92	2900	JN
19.	UNKNOWN	13.50	350	J
20.	UNKNOWN	13.59	1000	J
21.	UNKNOWN	14.15	540	J
22.	PENTACHLOROPHENYL METHYL SUL	14.57	820	JN
23.	UNKNOWN	16.86	950	J
24.	UNKNOWN	16.90	530	J
25.	UNKNOWN	16.96	1500	J
26.	UNKNOWN	17.17	280	J
27.	UNKNOWN	18.73	750	J
28.	UNKNOWN	18.88	410	J
29.	UNKNOWN	19.82	2700	J
30.	UNKNOWN	21.36	770	J

000081



1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM65

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.05

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8785.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 13 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

Extraction: (Type) SONC  
CONCENTRATION UNITS:

CAS NO. COMPOUND

(ug/L or ug/Kg) UG/KG

Q

100-52-7	Benzaldehyde	380	U
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl) ether	380	U
95-57-8	2-Chlorophenol	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
98-86-2	Acetophenone	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy) methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
105-60-2	Caprolactam	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	950	U
92-52-4	1,1'-Biphenyl	380	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	950	U
131-11-3	Dimethylphthalate	380	U
606-20-2	2,6-Dinitrotoluene	380	U
208-96-8	Acenaphthylene	380	U
99-09-2	3-Nitroaniline	950	U
83-32-9	Acenaphthene	380	U

000128

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM65

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.05

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8785.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 13 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	950	U
100-02-7	4-Nitrophenol	950	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
86-73-7	Fluorene	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
100-01-6	4-Nitroaniline	950	U
534-52-1	4,6-Dinitro-2-methylphenol	950	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
1912-24-9	Atrazine	380	U
87-86-5	Pentachlorophenol	950	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	22	J
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	21	J
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	88	BJ
205-99-2	Benzo(b)fluoranthene	38	J
207-08-9	Benzo(k)fluoranthene	23	J
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenz(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) Cannot be seperated from Diphenylamine

000129

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM65

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.05

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8785.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 13 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 7.0

Extraction: (Type) SONC

Number TICs found: 14

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.45	290	J
2.	UNKNOWN	4.61	2000	BJ
3.	UNKNOWN	4.75	150	J
4.	UNKNOWN	5.08	180	J
5.	UNKNOWN	5.63	100	J
6.	UNKNOWN	5.78	770	J
7.	UNKNOWN	7.49	130	BJ
8.	UNKNOWN	7.52	220	BJ
9.	UNKNOWN	18.17	240	J
10.	UNKNOWN	19.62	160	J
11.	UNKNOWN	19.83	230	J
12.	UNKNOWN	20.04	170	J
13.	UNKNOWN	20.34	260	J
14.	UNKNOWN	21.45	330	J
15.				
16.				
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000130

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM66

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.06

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8786.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 21 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

100-52-7	Benzaldehyde	420	U
108-95-2	Phenol	420	U
111-44-4	bis(2-Chloroethyl) ether	420	U
95-57-8	2-Chlorophenol	420	U
95-48-7	2-Methylphenol	420	U
108-60-1	2,2'-oxybis(1-Chloropropane)	420	U
98-86-2	Acetophenone	420	U
106-44-5	4-Methylphenol	420	U
621-64-7	N-Nitroso-di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
111-91-1	bis(2-Chloroethoxy) methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
105-60-2	Caprolactam	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	1100	U
92-52-4	1,1'-Biphenyl	420	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	420	U
606-20-2	2,6-Dinitrotoluene	420	U
208-96-8	Acenaphthylene	420	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	420	U

000155

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM66

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.06

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8786.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 21 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

Extraction: (Type) SONC

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-66-2	Diethylphthalate	420	U
86-73-7	Fluorene	420	U
7005-72-3	4-Chlorophenyl-phenylether	420	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	420	U
101-55-3	4-Bromophenyl-phenylether	420	U
118-74-1	Hexachlorobenzene	420	U
1912-24-9	Atrazine	420	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
86-74-8	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	50	BJ
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenz(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

(1) Cannot be seperated from Diphenylamine



1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM66

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.06

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8786.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 21 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

Extraction: (Type) SONC

Number TICs found: 13

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1. _____	UNKNOWN	4.45	220	J
2. _____	UNKNOWN	4.62	1100	BJ
3. _____	UNKNOWN	4.75	120	J
4. _____	UNKNOWN	5.08	170	J
5. _____	UNKNOWN	5.62	90	J
6. _____	UNKNOWN	5.79	1000	J
7. _____	UNKNOWN	7.53	99	BJ
8. _____	UNKNOWN	19.62	180	J
9. _____	UNKNOWN	19.82	220	J
10. _____	UNKNOWN	19.99	100	J
11. _____	UNKNOWN	20.05	140	J
12. _____	UNKNOWN	20.33	260	J
13. _____	UNKNOWN	21.44	330	J
14. _____				
15. _____				
16. _____				
17. _____				
18. _____				
19. _____				
20. _____				
21. _____				
22. _____				
23. _____				
24. _____				
25. _____				
26. _____				
27. _____				
28. _____				
29. _____				
30. _____				

000157

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM67

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.07

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8798.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 15 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Extraction: (Type) SONC  
CONCENTRATION UNITS:

CAS NO. COMPOUND

(ug/L or ug/Kg) UG/KG

Q

100-52-7	Benzaldehyde	390	U
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)ether	390	U
95-57-8	2-Chlorophenol	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
98-86-2	Acetophenone	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
105-60-2	Caprolactam	22	J
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	980	U
92-52-4	1,1'-Biphenyl	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	980	U
131-11-3	Dimethylphthalate	390	U
606-20-2	2,6-Dinitrotoluene	390	U
208-96-8	Acenaphthylene	390	U
99-09-2	3-Nitroaniline	980	U
83-32-9	Acenaphthene	390	U

000197



1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM67

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.07

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8798.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 15 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	980	U
100-02-7	4-Nitrophenol	980	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	22	J
86-73-7	Fluorene	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
100-01-6	4-Nitroaniline	980	U
534-52-1	4,6-Dinitro-2-methylphenol	980	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
1912-24-9	Atrazine	390	U
87-86-5	Pentachlorophenol	980	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-butylphthalate	29	J
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	73	BJ
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenz(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

(1) Cannot be seperated from Diphenylamine

000198

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM67

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.07

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8798.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 15 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 7.1

Extraction: (Type) SONC

Number TICs found: 14

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.42	410	J
2.	UNKNOWN	4.59	1900	BJ
3.	UNKNOWN	4.72	120	J
4.	UNKNOWN	5.05	200	J
5.	UNKNOWN	5.76	1000	J
6.	UNKNOWN	6.36	79	J
7.	UNKNOWN	7.46	240	BJ
8.	UNKNOWN	7.50	290	BJ
9.	UNKNOWN	15.43	100	J
10.	UNKNOWN	18.23	90	J
11.	UNKNOWN	19.56	160	J
12.	UNKNOWN	19.76	200	J
13.	UNKNOWN	20.25	160	J
14.	UNKNOWN	20.95	96	J
15.				
16.				
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000199

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM71

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.08

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8799.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 14 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

Extraction: (Type) SONC  
CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

100-52-7	Benzaldehyde	380	U
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl) ether	380	U
95-57-8	2-Chlorophenol	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
98-86-2	Acetophenone	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy) methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
105-60-2	Caprolactam	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	62	J
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	970	U
92-52-4	1,1'-Biphenyl	380	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	970	U
131-11-3	Dimethylphthalate	380	U
606-20-2	2,6-Dinitrotoluene	380	U
208-96-8	Acenaphthylene	380	U
99-09-2	3-Nitroaniline	970	U
83-32-9	Acenaphthene	380	U

000223

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM71

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.08

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8799.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 14 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

Extraction: (Type) SONC

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	970	U
100-02-7	4-Nitrophenol	970	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
86-73-7	Fluorene	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
100-01-6	4-Nitroaniline	970	U
534-52-1	4,6-Dinitro-2-methylphenol	970	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
1912-24-9	Atrazine	380	U
87-86-5	Pentachlorophenol	970	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	23	J
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	100	BJ
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenz(a,h)anthracene	32	J
191-24-2	Benzo(g,h,i)perylene	380	U

(1) Cannot be seperated from Diphenylamine

000224

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM71

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.08

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8799.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 14 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

Extraction: (Type) SONC

Number TICs found: 20

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.42	180	J
2.	UNKNOWN	4.59	1200	BJ
3.	UNKNOWN	5.05	130	J
4.	UNKNOWN	5.60	240	J
5.	UNKNOWN	5.76	810	J
6.	UNKNOWN	6.03	81	J
7. 445-03-4	BENZENAMINE, 4-CHLORO-2-(TRI	6.81	250	JN
8.	UNKNOWN	7.46	180	BJ
9.	UNKNOWN	7.50	200	BJ
10. 575-43-9	NAPHTHALENE, 1,6-DIMETHYL-	9.23	130	JN
11.	UNKNOWN	10.18	300	J
12.	UNKNOWN	10.24	110	J
13. 7320-53-8	DIBENZOFURAN, 4-METHYL-	11.01	220	JN
14. 82-68-8	BENZENE, PENTACHLORONITRO-	11.69	85	JN
15.	UNKNOWN	12.55	100	J
16.	UNKNOWN	17.25	140	J
17.	UNKNOWN	17.43	150	BJ
18.	UNKNOWN	18.87	470	J
19.	UNKNOWN	19.81	490	J
20.	UNKNOWN	20.44	89	J
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

000225



1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM72

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.09

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8789.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 9 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.4

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

100-52-7	Benzaldehyde	360	U
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl) ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
98-86-2	Acetophenone	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy) methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
105-60-2	Caprolactam	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	910	U
92-52-4	1,1'-Biphenyl	360	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	910	U
131-11-3	Dimethylphthalate	360	U
606-20-2	2,6-Dinitrotoluene	360	U
208-96-8	Acenaphthylene	360	U
99-09-2	3-Nitroaniline	910	U
83-32-9	Acenaphthene	360	U

000252

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM72

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.09

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8789.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 9 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.4

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	910	U
100-02-7	4-Nitrophenol	910	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
86-73-7	Fluorene	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
100-01-6	4-Nitroaniline	910	U
534-52-1	4,6-Dinitro-2-methylphenol	910	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
1912-24-9	Atrazine	360	U
87-86-5	Pentachlorophenol	910	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	19	J
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	230	J
117-84-0	Di-n-octylphthalate	95	BJ
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenz(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) Cannot be seperated from Diphenylamine

000253



1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM72

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.09

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8789.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 9 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.4

Extraction: (Type) SONC

Number TICs found: 8

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.61	910	BJ
2.	UNKNOWN	5.08	160	J
3.	UNKNOWN	5.63	78	J
4.	UNKNOWN	5.79	180	J
5.	UNKNOWN	7.49	91	BJ
6.	UNKNOWN	7.53	150	BJ
7.	UNKNOWN	17.46	150	BJ
8.	UNKNOWN	18.18	130	J
9.				
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000254

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM73

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.10

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8790.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 8 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.1

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

100-52-7	Benzaldehyde	360	U
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
98-86-2	Acetophenone	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
105-60-2	Caprolactam	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	900	U
92-52-4	1,1'-Biphenyl	360	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	900	U
131-11-3	Dimethylphthalate	360	U
606-20-2	2,6-Dinitrotoluene	360	U
208-96-8	Acenaphthylene	360	U
99-09-2	3-Nitroaniline	900	U
83-32-9	Acenaphthene	360	U

000269

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM73

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.10

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8790.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 8 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.1

Extraction: (Type) SONC

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	900	U
100-02-7	4-Nitrophenol	900	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
86-73-7	Fluorene	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
100-01-6	4-Nitroaniline	900	U
534-52-1	4,6-Dinitro-2-methylphenol	900	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
1912-24-9	Atrazine	360	U
87-86-5	Pentachlorophenol	900	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	24	J
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	290	J
117-84-0	Di-n-octylphthalate	43	BJ
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenz(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) Cannot be seperated from Diphenylamine

000270

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM73

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.10

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8790.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 8 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 6.1

Extraction: (Type) SONC

Number TICs found: 10

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1. _____	UNKNOWN	4.45	170	J
2. _____	UNKNOWN	4.61	1100	BJ
3. _____	UNKNOWN	5.79	410	J
4. _____	UNKNOWN	7.49	110	BJ
5. _____	UNKNOWN	7.53	180	BJ
6. 8017-34-3	TECHNICAL CHLOROPHENOTHANE	15.10	130	JN
7. _____	UNKNOWN	15.46	130	J
8. _____	UNKNOWN	18.18	190	J
9. _____	UNKNOWN	20.34	210	J
10. _____	UNKNOWN	21.44	370	J
11. _____				
12. _____				
13. _____				
14. _____				
15. _____				
16. _____				
17. _____				
18. _____				
19. _____				
20. _____				
21. _____				
22. _____				
23. _____				
24. _____				
25. _____				
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27. _____				
28. _____				
29. _____				
30. _____				

000271

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM74

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.11

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8794.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 17 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.5

Extraction: (Type) SONC  
CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

100-52-7	Benzaldehyde	400	U
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl) ether	400	U
95-57-8	2-Chlorophenol	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
98-86-2	Acetophenone	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy) methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
105-60-2	Caprolactam	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	1000	U
92-52-4	1,1'-Biphenyl	400	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	400	U
606-20-2	2,6-Dinitrotoluene	400	U
208-96-8	Acenaphthylene	400	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	400	U

000288



1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM74

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.11

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8794.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 17 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.5

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
86-73-7	Fluorene	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
1912-24-9	Atrazine	400	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
86-74-8	Carbazole	400	U
84-74-2	Di-n-butylphthalate	21	J
206-44-0	Fluoranthene	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	120	BJ
205-99-2	Benzo(b)fluoranthene	400	U
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenz(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

(1) Cannot be seperated from Diphenylamine

000289

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM74

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.11

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8794.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 17 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.5

Extraction: (Type) SONC

Number TICs found: 12

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.42	210	J
2.	UNKNOWN	4.59	2100	BJ
3.	UNKNOWN	4.71	320	J
4.	UNKNOWN	5.05	100	J
5.	UNKNOWN	5.59	140	J
6.	UNKNOWN	5.75	510	J
7.	UNKNOWN	7.46	200	BJ
8.	UNKNOWN	7.49	210	BJ
9.	PHENOL, 2-FLUORO-4-NITRO-	8.31	87	JN
10.	UNKNOWN	17.17	93	J
11.	UNKNOWN	17.43	140	BJ
12.	UNKNOWN	18.13	95	J
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000290



1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM75

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.12

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8795.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 7 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 4.1

Extraction: (Type) SONC  
CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Q

CAS NO. COMPOUND

100-52-7	Benzaldehyde	350	U
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl) ether	350	U
95-57-8	2-Chlorophenol	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
98-86-2	Acetophenone	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy) methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
105-60-2	Caprolactam	350	U
59-50-7	4-Chloro-3-methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	890	U
92-52-4	1,1'-Biphenyl	350	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	890	U
131-11-3	Dimethylphthalate	350	U
606-20-2	2,6-Dinitrotoluene	350	U
208-96-8	Acenaphthylene	350	U
99-09-2	3-Nitroaniline	890	U
83-32-9	Acenaphthene	350	U

000307

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM75

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.12

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8795.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 7 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 4.1

Extraction: (Type) SONC

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	890	U
100-02-7	4-Nitrophenol	890	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
86-73-7	Fluorene	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
100-01-6	4-Nitroaniline	890	U
534-52-1	4,6-Dinitro-2-methylphenol	890	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
1912-24-9	Atrazine	350	U
87-86-5	Pentachlorophenol	890	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	64	BJ
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenz(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) Cannot be seperated from Diphenylamine

000308

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM75

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.12

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8795.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 7 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 4.1

Extraction: (Type) SONC

Number TICs found: 9

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.42	140	J
2.	UNKNOWN	4.59	1500	BJ
3.	UNKNOWN	4.71	300	J
4.	UNKNOWN	5.59	97	J
5.	UNKNOWN	5.75	280	J
6.	UNKNOWN	7.46	98	BJ
7.	UNKNOWN	7.49	100	BJ
8.	UNKNOWN	17.44	99	BJ
9.	UNKNOWN	19.77	440	J
10.				
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000309

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM76

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.13

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8410.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 12 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.3

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

100-52-7	Benzaldehyde	380	U
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl) ether	380	U
95-57-8	2-Chlorophenol	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
98-86-2	Acetophenone	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy) methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
105-60-2	Caprolactam	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	940	U
92-52-4	1,1'-Biphenyl	380	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	940	U
131-11-3	Dimethylphthalate	380	U
606-20-2	2,6-Dinitrotoluene	380	U
208-96-8	Acenaphthylene	380	U
99-09-2	3-Nitroaniline	940	U
83-32-9	Acenaphthene	380	U

000322

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM76

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.13

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8410.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 12 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.3

Extraction: (Type) SONC  
CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	940	U
100-02-7	4-Nitrophenol	940	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
86-73-7	Fluorene	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
100-01-6	4-Nitroaniline	940	U
534-52-1	4,6-Dinitro-2-methylphenol	940	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
1912-24-9	Atrazine	380	U
87-86-5	Pentachlorophenol	940	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	20	BJ
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	86	BJ
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenz(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) Cannot be seperated from Diphenylamine

000323



1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM76

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.13

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8410.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 12 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.3

Extraction: (Type) SONC

Number TICs found: 14

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.29	180	J
2.	UNKNOWN	4.46	2000	BJ
3.	UNKNOWN	4.59	280	J
4.	UNKNOWN	4.91	98	J
5.	UNKNOWN	5.15	93	J
6.	UNKNOWN	5.62	300	J
7.	UNKNOWN	7.34	110	BJ
8.	UNKNOWN	7.37	160	BJ
9.	UNKNOWN	15.02	80	J
10.	UNKNOWN	15.58	83	J
11.	UNKNOWN	16.32	84	J
12.	UNKNOWN	16.79	110	J
13.	UNKNOWN	17.31	130	BJ
14.	UNKNOWN	19.19	96	J
15.				
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000324

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM77

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.14

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8411.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 12 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.5

Extraction: (Type) SONC  
CONCENTRATION UNITS:

CAS NO. COMPOUND

(ug/L or ug/Kg) UG/KG

Q

100-52-7	Benzaldehyde	380	U
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl) ether	380	U
95-57-8	2-Chlorophenol	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
98-86-2	Acetophenone	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy) methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
105-60-2	Caprolactam	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	940	U
92-52-4	1,1'-Biphenyl	380	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	940	U
131-11-3	Dimethylphthalate	380	U
606-20-2	2,6-Dinitrotoluene	380	U
208-96-8	Acenaphthylene	380	U
99-09-2	3-Nitroaniline	940	U
83-32-9	Acenaphthene	380	U

000345



1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM77

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.14

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8411.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 12 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.5

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	940	U
100-02-7	4-Nitrophenol	940	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
86-73-7	Fluorene	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
100-01-6	4-Nitroaniline	940	U
534-52-1	4,6-Dinitro-2-methylphenol	940	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
1912-24-9	Atrazine	380	U
87-86-5	Pentachlorophenol	940	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	75	BJ
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenz(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) Cannot be seperated from Diphenylamine

000346

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM77

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.14

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8411.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 12 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 5.5

Extraction: (Type) SONC

Number TICs found: 10

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.29	200	J
2.	UNKNOWN	4.46	1800	BJ
3.	UNKNOWN	4.59	250	J
4.	UNKNOWN	4.91	88	J
5.	UNKNOWN	5.62	380	J
6.	UNKNOWN	7.34	99	BJ
7.	UNKNOWN	7.37	110	BJ
8.	UNKNOWN	15.43	95	J
9.	UNKNOWN	17.31	120	BJ
10.	UNKNOWN	19.19	99	J
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000347

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM78

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.15

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8412.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 5 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 4.1

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

100-52-7	Benzaldehyde	350	U
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl) ether	350	U
95-57-8	2-Chlorophenol	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
98-86-2	Acetophenone	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
105-60-2	Caprolactam	350	U
59-50-7	4-Chloro-3-methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	870	U
92-52-4	1,1'-Biphenyl	350	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	870	U
131-11-3	Dimethylphthalate	350	U
606-20-2	2,6-Dinitrotoluene	350	U
208-96-8	Acenaphthylene	350	U
99-09-2	3-Nitroaniline	870	U
83-32-9	Acenaphthene	350	U

000363

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM78

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.15

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8412.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 5 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 4.1

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	870	U
100-02-7	4-Nitrophenol	870	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
86-73-7	Fluorene	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
100-01-6	4-Nitroaniline	870	U
534-52-1	4,6-Dinitro-2-methylphenol	870	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
1912-24-9	Atrazine	350	U
87-86-5	Pentachlorophenol	870	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	61	BJ
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenz(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) Cannot be seperated from Diphenylamine

000364

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM78

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.15

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8412.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 5 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 4.1

Extraction: (Type) SONC

Number TICs found: 12

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.29	97	J
2.	UNKNOWN	4.46	1400	BJ
3.	UNKNOWN	4.59	94	J
4.	UNKNOWN	4.92	300	J
5.	UNKNOWN	5.62	350	J
6.	UNKNOWN	7.33	140	BJ
7.	UNKNOWN	7.37	180	BJ
8. 3424-82-6	O, P' -DDE	14.00	170	JN
9. 50-29-3	CHLOROPHENOTHANE	14.93	700	JN
10.	UNKNOWN	15.59	76	J
11.	UNKNOWN	17.31	99	BJ
12.	UNKNOWN	18.16	72	J
13.				
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000365

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM81

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.18

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8415.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 23 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

100-52-7	Benzaldehyde	53	J
108-95-2	Phenol	430	U
111-44-4	bis(2-Chloroethyl)ether	430	U
95-57-8	2-Chlorophenol	430	U
95-48-7	2-Methylphenol	430	U
108-60-1	2,2'-oxybis(1-Chloropropane)	430	U
98-86-2	Acetophenone	430	U
106-44-5	4-Methylphenol	430	U
621-64-7	N-Nitroso-di-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
105-60-2	Caprolactam	430	U
59-50-7	4-Chloro-3-methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	1100	U
92-52-4	1,1'-Biphenyl	430	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	430	U
606-20-2	2,6-Dinitrotoluene	430	U
208-96-8	Acenaphthylene	430	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	430	U

000454

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM81

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.18

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8415.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 23 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U
84-66-2	Diethylphthalate	430	U
86-73-7	Fluorene	430	U
7005-72-3	4-Chlorophenyl-phenylether	430	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	430	U
101-55-3	4-Bromophenyl-phenylether	430	U
118-74-1	Hexachlorobenzene	430	U
1912-24-9	Atrazine	430	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	430	U
120-12-7	Anthracene	430	U
86-74-8	Carbazole	430	U
84-74-2	Di-n-butylphthalate	430	U
206-44-0	Fluoranthene	430	U
129-00-0	Pyrene	430	U
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	430	U
218-01-9	Chrysene	430	U
117-81-7	bis(2-Ethylhexyl)phthalate	430	U
117-84-0	Di-n-octylphthalate	110	BJ
205-99-2	Benzo(b)fluoranthene	430	U
207-08-9	Benzo(k)fluoranthene	430	U
50-32-8	Benzo(a)pyrene	430	U
193-39-5	Indeno(1,2,3-cd)pyrene	430	U
53-70-3	Dibenz(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	430	U

(1) Cannot be seperated from Diphenylamine

000455



1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM81

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.18

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8415.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 23 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 7.3

Extraction: (Type) SONC

Number TICs found: 25

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.29	920	J
2.	UNKNOWN	4.46	1400	BJ
3.	UNKNOWN	4.91	660	J
4.	UNKNOWN	5.19	110	J
5.	UNKNOWN	5.64	3400	J
6.	UNKNOWN	7.34	160	BJ
7.	UNKNOWN	7.37	150	BJ
8. 104-54-1	2-PROPEN-1-OL, 3-PHENYL-	8.05	120	JN
9. 57-10-3	HEXADECANOIC ACID	12.48	110	JN
10.	UNKNOWN	15.59	840	J
11.	UNKNOWN	16.04	130	J
12.	UNKNOWN	16.08	420	BJ
13.	UNKNOWN	16.36	2200	J
14. 480-40-0	CHRYSLIN	16.55	500	JN
15.	UNKNOWN	16.68	290	J
16.	UNKNOWN	16.74	400	J
17.	UNKNOWN	16.79	200	J
18. 87620-04-0	5-METHOXY-3,7-DIHYDROXYFLAVA	16.85	870	JN
19.	UNKNOWN	16.94	210	J
20.	UNKNOWN	17.07	110	J
21.	UNKNOWN	17.13	140	J
22.	UNKNOWN	17.31	180	BJ
23.	UNKNOWN	17.75	100	J
24.	UNKNOWN	18.28	120	BJ
25.	UNKNOWN	19.56	95	J
26.				
27.				
28.				
29.				
30.				

000456

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM82

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.19

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8416.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 16 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

100-52-7	Benzaldehyde	390	U
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl) ether	390	U
95-57-8	2-Chlorophenol	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
98-86-2	Acetophenone	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy) methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
105-60-2	Caprolactam	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	990	U
92-52-4	1,1'-Biphenyl	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	990	U
131-11-3	Dimethylphthalate	390	U
606-20-2	2,6-Dinitrotoluene	390	U
208-96-8	Acenaphthylene	390	U
99-09-2	3-Nitroaniline	990	U
83-32-9	Acenaphthene	390	U

000487

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM82

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.19

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8416.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 16 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	990	U
100-02-7	4-Nitrophenol	990	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
86-73-7	Fluorene	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
100-01-6	4-Nitroaniline	990	U
534-52-1	4,6-Dinitro-2-methylphenol	990	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
1912-24-9	Atrazine	390	U
87-86-5	Pentachlorophenol	990	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenz(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

(1) Cannot be seperated from Diphenylamine

000488

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM82

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.19

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8416.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 16 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 7.1

Extraction: (Type) SONC

Number TICs found: 16

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.29	930	J
2.	UNKNOWN	4.45	1200	BJ
3.	UNKNOWN	4.92	420	J
4.	UNKNOWN	5.64	2400	J
5.	UNKNOWN	5.73	120	J
6.	UNKNOWN	7.33	130	BJ
7.	UNKNOWN	7.37	120	BJ
8.	UNKNOWN	15.33	83	J
9.	UNKNOWN	16.78	110	J
10.	UNKNOWN	17.06	110	J
11.	UNKNOWN	17.99	120	J
12.	UNKNOWN	19.37	110	J
13. 15547-89-4	2- (3-METHOXYPHENYL) CYCLOHEXA	19.55	230	JN
14.	UNKNOWN	19.75	95	J
15.	UNKNOWN	20.06	170	J
16.	UNKNOWN	21.28	110	J
17.				
18.				
19.				
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23.				
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27.				
28.				
29.				
30.				

000489

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM83

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.20

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8417.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 15 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

Extraction: (Type) SONC  
CONCENTRATION UNITS:

CAS NO. COMPOUND

(ug/L or ug/Kg) UG/KG

Q

100-52-7	Benzaldehyde	390	U
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl) ether	390	U
95-57-8	2-Chlorophenol	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
98-86-2	Acetophenone	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy) methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
105-60-2	Caprolactam	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	980	U
92-52-4	1,1'-Biphenyl	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	980	U
131-11-3	Dimethylphthalate	390	U
606-20-2	2,6-Dinitrotoluene	390	U
208-96-8	Acenaphthylene	390	U
99-09-2	3-Nitroaniline	980	U
83-32-9	Acenaphthene	390	U

000508

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM83

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.20

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8417.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 15 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	980	U
100-02-7	4-Nitrophenol	980	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
86-73-7	Fluorene	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
100-01-6	4-Nitroaniline	980	U
534-52-1	4,6-Dinitro-2-methylphenol	980	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
1912-24-9	Atrazine	390	U
87-86-5	Pentachlorophenol	980	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	77	BJ
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenz(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

(1) Cannot be seperated from Diphenylamine

000509

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM83

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.20

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8417.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 15 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 7.5

Extraction: (Type) SONC

Number TICs found: 10

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.29	1000	J
2.	UNKNOWN	4.46	1200	BJ
3.	UNKNOWN	4.93	440	J
4.	UNKNOWN	5.64	2200	J
5.	UNKNOWN	5.73	110	J
6.	UNKNOWN	7.34	100	BJ
7.	UNKNOWN	7.37	140	BJ
8.	UNKNOWN	16.79	88	J
9.	UNKNOWN	17.31	110	BJ
10.	UNKNOWN	20.35	110	J
11.				
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000510



1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM84

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.21

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8418.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 16 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 7.5

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

100-52-7	Benzaldehyde	390	U
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl) ether	390	U
95-57-8	2-Chlorophenol	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
98-86-2	Acetophenone	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy) methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
105-60-2	Caprolactam	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	990	U
92-52-4	1,1'-Biphenyl	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	990	U
131-11-3	Dimethylphthalate	390	U
606-20-2	2,6-Dinitrotoluene	390	U
208-96-8	Acenaphthylene	390	U
99-09-2	3-Nitroaniline	990	U
83-32-9	Acenaphthene	390	U

000524

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM84

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.21

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8418.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 16 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	990	U
100-02-7	4-Nitrophenol	990	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
86-73-7	Fluorene	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
100-01-6	4-Nitroaniline	990	U
534-52-1	4,6-Dinitro-2-methylphenol	990	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
1912-24-9	Atrazine	390	U
87-86-5	Pentachlorophenol	990	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	83	BJ
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenz(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

(1) Cannot be seperated from Diphenylamine

000525

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM84

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.21

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8418.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 16 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 7.5

Extraction: (Type) SONC

Number TICs found: 8

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.29	640	J
2.	UNKNOWN	4.45	1400	BJ
3.	UNKNOWN	4.91	310	J
4.	UNKNOWN	5.64	2300	J
5.	UNKNOWN	7.34	110	BJ
6.	UNKNOWN	7.37	120	BJ
7. 57-10-3	HEXADECANOIC ACID	12.49	100	JN
8. 3648-21-3	1,2-BENZENEDICARBOXYLIC ACID	17.31	120	JN
9.				
10.				
11.				
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000526

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM85

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.22

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8419.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 20 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

Extraction: (Type) SONC  
CONCENTRATION UNITS:

CAS NO. COMPOUND

(ug/L or ug/Kg) UG/KG

Q

100-52-7	Benzaldehyde	410	U
108-95-2	Phenol	410	U
111-44-4	bis(2-Chloroethyl)ether	410	U
95-57-8	2-Chlorophenol	410	U
95-48-7	2-Methylphenol	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
98-86-2	Acetophenone	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitroso-di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
105-60-2	Caprolactam	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	1000	U
92-52-4	1,1'-Biphenyl	410	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	410	U
606-20-2	2,6-Dinitrotoluene	410	U
208-96-8	Acenaphthylene	410	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	410	U

000538

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM85

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.22

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8419.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 20 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

Extraction: (Type) SONC  
CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND		
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
86-73-7	Fluorene	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
1912-24-9	Atrazine	410	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
86-74-8	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	160	BJ
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenz(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

(1) Cannot be seperated from Diphenylamine

000539

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM85

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.22

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: E8419.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 20 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/19/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 7.5

Extraction: (Type) SONC

Number TICs found: 12

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.29	390	J
2.	UNKNOWN	4.46	1500	BJ
3.	UNKNOWN	4.59	220	J
4.	UNKNOWN	4.92	140	J
5.	UNKNOWN	5.63	510	J
6.	UNKNOWN	7.34	160	BJ
7.	UNKNOWN	7.37	180	BJ
8.	UNKNOWN	15.58	110	J
9.	UNKNOWN	16.79	120	J
10.	UNKNOWN	16.95	110	J
11.	UNKNOWN	17.31	240	BJ
12.	UNKNOWN	18.28	140	BJ
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
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30.				

000540

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM63

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.01

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 14 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/21/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/22/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

Q

CAS NO.	COMPOUND		
319-84-6	alpha-BHC	0.52	PJ
319-85-7	beta-BHC	6.5	P
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	3.5	PB
309-00-2	Aldrin	0.56	PJ
1024-57-3	Heptachlor epoxide	0.69	PJ
959-98-8	Endosulfan I	1.2	J
60-57-1	Dieldrin	0.46	PJ
72-55-9	4,4'-DDE	24	
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	3.3	PJ
72-54-8	4,4'-DDD	8.6	
1031-07-8	Endosulfan sulfate	5.7	P
50-29-3	4,4'-DDT	44	PB
72-43-5	Methoxychlor	4.5	PJ
53494-70-5	Endrin ketone	2.7	PJ
7421-93-4	Endrin aldehyde	1.7	PJ
5103-71-9	alpha-Chlordane	2.0	U
5103-74-2	gamma-Chlordane	1.7	PJ
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	78	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

000760



1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM64

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.02

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 22 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/14/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/18/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

Q

CAS NO.

COMPOUND

319-84-6	alpha-BHC	4.0	P
319-85-7	beta-BHC	24	P
319-86-8	delta-BHC	2.2	U
58-89-9	gamma-BHC (Lindane)	2.2	U
76-44-8	Heptachlor	2.2	U
309-00-2	Aldrin	6.1	P
1024-57-3	Heptachlor epoxide	2.2	U
959-98-8	Endosulfan I	18	P
60-57-1	Dieldrin	5.0	PB
72-55-9	4,4'-DDE	27	P
72-20-8	Endrin	4.2	U
33213-65-9	Endosulfan II	15	PB
72-54-8	4,4'-DDD	18	PB
1031-07-8	Endosulfan sulfate	20	
50-29-3	4,4'-DDT	53	B
72-43-5	Methoxychlor	18	JB
53494-70-5	Endrin ketone	5.8	B
7421-93-4	Endrin aldehyde	16	P
5103-71-9	alpha-Chlordane	2.2	U
5103-74-2	gamma-Chlordane	16	PB
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	86	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	42	U
11096-82-5	Aroclor-1260	42	U

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM65

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.05

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 13 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/21/00

Concentrated Extract Volume: 5000(uL)

Date Analyzed: 09/23/00

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NO.

COMPOUND

Q

319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	0.26	PJ
319-86-8	delta-BHC	0.56	PJB
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	0.22	PJB
309-00-2	Aldrin	0.13	PJ
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	3.8	U
72-55-9	4,4'-DDE	28	P
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	3.8	U
72-54-8	4,4'-DDD	9.8	
1031-07-8	Endosulfan sulfate	3.8	U
50-29-3	4,4'-DDT	50	B
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin ketone	3.8	U
7421-93-4	Endrin aldehyde	3.8	U
5103-71-9	alpha-Chlordane	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
8001-35-2	Toxaphene	130	BJP
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	77	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

000810

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM66

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.06

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 21 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/14/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/21/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.2	U
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	0.57	PJB
58-89-9	gamma-BHC (Lindane)	2.2	U
76-44-8	Heptachlor	0.36	PJB
309-00-2	Aldrin	2.2	U
1024-57-3	Heptachlor epoxide	0.25	PJ
959-98-8	Endosulfan I	0.18	PJ
60-57-1	Dieldrin	0.65	JB
72-55-9	4,4'-DDE	4.7	
72-20-8	Endrin	0.39	PJ
33213-65-9	Endosulfan II	0.82	PJB
72-54-8	4,4'-DDD	1.7	PJB
1031-07-8	Endosulfan sulfate	0.71	PJ
50-29-3	4,4'-DDT	9.5	B
72-43-5	Methoxychlor	0.53	PJB
53494-70-5	Endrin ketone	0.66	PJB
7421-93-4	Endrin aldehyde	1.4	PJ
5103-71-9	alpha-Chlordane	0.33	PJ
5103-74-2	gamma-Chlordane	1.1	PJB
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	85	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	42	U
11096-82-5	Aroclor-1260	42	U

000861

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM67

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.07

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 15 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/21/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/23/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

Q

CAS NO.	COMPOUND		
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	0.21	PJ
319-86-8	delta-BHC	0.40	PJB
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	0.25	PJB
309-00-2	Aldrin	2.0	U
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	3.9	U
72-55-9	4,4'-DDE	34	P
72-20-8	Endrin	3.9	U
33213-65-9	Endosulfan II	3.9	U
72-54-8	4,4'-DDD	6.7	
1031-07-8	Endosulfan sulfate	3.9	U
50-29-3	4,4'-DDT	61	EB
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin ketone	3.9	U
7421-93-4	Endrin aldehyde	3.9	U
5103-71-9	alpha-Chlordane	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
8001-35-2	Toxaphene	140	BJ
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	79	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

000902

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM71

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.08

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 14 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/14/00

Concentrated Extract Volume: 5000(uL)

Date Analyzed: 09/21/00

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	0.69	PJB
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	0.25	PJB
309-00-2	Aldrin	0.090	PJ
1024-57-3	Heptachlor epoxide	0.13	J
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	0.58	JB
72-55-9	4,4'-DDE	0.82	PJ
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	0.50	PJB
72-54-8	4,4'-DDD	0.50	PJB
1031-07-8	Endosulfan sulfate	0.74	PJ
50-29-3	4,4'-DDT	3.1	PJB
72-43-5	Methoxychlor	0.75	PJB
53494-70-5	Endrin ketone	0.14	PJB
7421-93-4	Endrin aldehyde	0.94	PJ
5103-71-9	alpha-Chlordane	0.35	PJ
5103-74-2	gamma-Chlordane	0.73	PJB
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	78	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

000979

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM72

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.09

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 9 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/14/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/21/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.4

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	0.47	JB
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	0.16	PJB
309-00-2	Aldrin	1.9	U
1024-57-3	Heptachlor epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	3.6	U
72-55-9	4,4'-DDE	24	U
72-20-8	Endrin	3.6	U
33213-65-9	Endosulfan II	3.6	U
72-54-8	4,4'-DDD	3.6	U
1031-07-8	Endosulfan sulfate	3.6	U
50-29-3	4,4'-DDT	42	B
72-43-5	Methoxychlor	19	U
53494-70-5	Endrin ketone	3.6	U
7421-93-4	Endrin aldehyde	3.6	U
5103-71-9	alpha-Chlordane	1.9	U
5103-74-2	gamma-Chlordane	1.9	U
8001-35-2	Toxaphene	89	JP
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

001013

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: ATAS, INC.

Contract: 68-W-00-066

FGM73

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.10

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 8 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/22/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/26/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.1

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

Q

CAS NO.	COMPOUND		
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	0.15	PJ
319-86-8	delta-BHC	0.46	PJB
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	0.20	PJB
309-00-2	Aldrin	0.12	PJ
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.6	U
72-55-9	4,4'-DDE	52	E
72-20-8	Endrin	3.6	U
33213-65-9	Endosulfan II	3.6	U
72-54-8	4,4'-DDD	3.6	U
1031-07-8	Endosulfan sulfate	3.6	U
50-29-3	4,4'-DDT	110	EB
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.6	U
7421-93-4	Endrin aldehyde	3.6	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	260	
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	73	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

001057



1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM74

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.11

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 17 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/14/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/21/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.5

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	0.33	PJB
309-00-2	Aldrin	2.0	U
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	0.36	JB
72-55-9	4,4'-DDE	2.1	J
72-20-8	Endrin	4.0	U
33213-65-9	Endosulfan II	0.76	PJB
72-54-8	4,4'-DDD	1.4	JB
1031-07-8	Endosulfan sulfate	0.29	PJ
50-29-3	4,4'-DDT	3.5	PJB
72-43-5	Methoxychlor	13	JB
53494-70-5	Endrin ketone	4.0	U
7421-93-4	Endrin aldehyde	0.86	PJ
5103-71-9	alpha-Chlordane	0.29	J
5103-74-2	gamma-Chlordane	2.0	U
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	40	U
11104-28-2	Aroclor-1221	81	U
11141-16-5	Aroclor-1232	40	U
53469-21-9	Aroclor-1242	40	U
12672-29-6	Aroclor-1248	40	U
11097-69-1	Aroclor-1254	40	U
11096-82-5	Aroclor-1260	40	U

001130

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM75

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.12

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 12 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/14/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/21/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 4.1

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	0.36	PJB
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	1.9	U
1024-57-3	Heptachlor epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	3.8	U
72-55-9	4,4'-DDE	13	
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	3.8	U
72-54-8	4,4'-DDD	3.8	U
1031-07-8	Endosulfan sulfate	3.8	U
50-29-3	4,4'-DDT	29	B
72-43-5	Methoxychlor	19	U
53494-70-5	Endrin ketone	3.8	U
7421-93-4	Endrin aldehyde	3.8	U
5103-71-9	alpha-Chlordane	1.9	U
5103-74-2	gamma-Chlordane	1.9	U
8001-35-2	Toxaphene	52	JP
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	76	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

001165

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM76

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.13

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 12 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/14/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/21/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.3

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

Q

CAS NO.	COMPOUND		
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	0.28	PJB
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	0.25	PJB
309-00-2	Aldrin	0.13	PJ
1024-57-3	Heptachlor epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	3.8	U
72-55-9	4,4'-DDE	3.4	J
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	3.8	U
72-54-8	4,4'-DDD	3.8	U
1031-07-8	Endosulfan sulfate	3.8	U
50-29-3	4,4'-DDT	7.0	PB
72-43-5	Methoxychlor	19	U
53494-70-5	Endrin ketone	3.8	U
7421-93-4	Endrin aldehyde	3.8	U
5103-71-9	alpha-Chlordane	1.9	U
5103-74-2	gamma-Chlordane	1.9	U
8001-35-2	Toxaphene	63	JP
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	76	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

001211

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM77

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.14

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 12 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/14/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/21/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.4

Sulfur Cleanup: (Y/N) N

CAS NO.

COMPOUND

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

Q

319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	0.15	PJB
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	0.23	PJB
309-00-2	Aldrin	1.9	U
1024-57-3	Heptachlor epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	3.8	U
72-55-9	4,4'-DDE	4.3	
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	3.8	U
72-54-8	4,4'-DDD	3.8	U
1031-07-8	Endosulfan sulfate	3.8	U
50-29-3	4,4'-DDT	11	B
72-43-5	Methoxychlor	19	U
53494-70-5	Endrin ketone	3.8	U
7421-93-4	Endrin aldehyde	3.8	U
5103-71-9	alpha-Chlordane	1.9	U
5103-74-2	gamma-Chlordane	1.9	U
8001-35-2	Toxaphene	46	JP
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	76	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

001266

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM78

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.15

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 5 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/21/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/23/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 4.1

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	0.78	J
319-86-8	delta-BHC	0.32	PJB
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	0.17	J
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.5	U
72-55-9	4,4'-DDE	140	PE
72-20-8	Endrin	3.5	U
33213-65-9	Endosulfan II	3.5	U
72-54-8	4,4'-DDD	3.5	U
1031-07-8	Endosulfan sulfate	3.5	U
50-29-3	4,4'-DDT	470	PEB
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.5	U
7421-93-4	Endrin aldehyde	3.5	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	1400	BP
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	71	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

001313

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM78DL

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.15DL

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 5 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/14/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/26/00

Injection Volume: 1.0 (uL)

Dilution Factor: 20.0

GPC Cleanup: (Y/N) Y pH: 4.1

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

Q

CAS NO.	COMPOUND		
319-84-6	alpha-BHC	36	U
319-85-7	beta-BHC	36	U
319-86-8	delta-BHC	36	U
58-89-9	gamma-BHC (Lindane)	36	U
76-44-8	Heptachlor	36	U
309-00-2	Aldrin	36	U
1024-57-3	Heptachlor epoxide	36	U
959-98-8	Endosulfan I	36	U
60-57-1	Dieldrin	69	U
72-55-9	4,4'-DDE	170	D
72-20-8	Endrin	69	U
33213-65-9	Endosulfan II	69	U
72-54-8	4,4'-DDD	69	U
1031-07-8	Endosulfan sulfate	69	U
50-29-3	4,4'-DDT	700	DB
72-43-5	Methoxychlor	360	U
53494-70-5	Endrin ketone	69	U
7421-93-4	Endrin aldehyde	69	U
5103-71-9	alpha-Chlordane	36	U
5103-74-2	gamma-Chlordane	36	U
8001-35-2	Toxaphene	1600	DJ
12674-11-2	Aroclor-1016	690	U
11104-28-2	Aroclor-1221	1400	U
11141-16-5	Aroclor-1232	690	U
53469-21-9	Aroclor-1242	690	U
12672-29-6	Aroclor-1248	690	U
11097-69-1	Aroclor-1254	690	U
11096-82-5	Aroclor-1260	690	U

001361

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM79

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.16

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 32 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/21/00

Concentrated Extract Volume: 5000(uL)

Date Analyzed: 09/23/00

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	Q
319-84-6	alpha-BHC	0.41 PJ
319-85-7	beta-BHC	0.50 PJ
319-86-8	delta-BHC	1.1 PJB
58-89-9	gamma-BHC (Lindane)	2.5 U
76-44-8	Heptachlor	0.52 PJB
309-00-2	Aldrin	0.26 PJ
1024-57-3	Heptachlor epoxide	0.45 PJ
959-98-8	Endosulfan I	1.1 PJ
60-57-1	Dieldrin	0.93 PJ
72-55-9	4,4'-DDE	40
72-20-8	Endrin	4.0 PJ
33213-65-9	Endosulfan II	3.2 J
72-54-8	4,4'-DDD	6.1
1031-07-8	Endosulfan sulfate	1.0 PJ
50-29-3	4,4'-DDT	60 B
72-43-5	Methoxychlor	4.0 PJ
53494-70-5	Endrin ketone	1.1 PJ
7421-93-4	Endrin aldehyde	4.1 PJ
5103-71-9	alpha-Chlordane	0.79 PJ
5103-74-2	gamma-Chlordane	0.73 PJ
8001-35-2	Toxaphene	250 U
12674-11-2	Aroclor-1016	49 U
11104-28-2	Aroclor-1221	99 U
11141-16-5	Aroclor-1232	49 U
53469-21-9	Aroclor-1242	49 U
12672-29-6	Aroclor-1248	49 U
11097-69-1	Aroclor-1254	49 U
11096-82-5	Aroclor-1260	49 U

001392



1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM80

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.17

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 20 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/14/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/21/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

Q

CAS NO.	COMPOUND		
319-84-6	alpha-BHC	2.1	U
319-85-7	beta-BHC	0.18	PJ
319-86-8	delta-BHC	0.41	PJB
58-89-9	gamma-BHC (Lindane)	2.1	U
76-44-8	Heptachlor	0.33	PJB
309-00-2	Aldrin	0.090	PJ
1024-57-3	Heptachlor epoxide	2.1	U
959-98-8	Endosulfan I	2.1	U
60-57-1	Dieldrin	4.1	U
72-55-9	4,4'-DDE	18	
72-20-8	Endrin	4.1	U
33213-65-9	Endosulfan II	4.1	U
72-54-8	4,4'-DDD	6.2	B
1031-07-8	Endosulfan sulfate	4.1	U
50-29-3	4,4'-DDT	7.3	PB
72-43-5	Methoxychlor	21	U
53494-70-5	Endrin ketone	4.1	U
7421-93-4	Endrin aldehyde	4.1	U
5103-71-9	alpha-Chlordane	2.1	U
5103-74-2	gamma-Chlordane	2.1	U
8001-35-2	Toxaphene	48	JP
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	84	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	41	U

001426

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM81

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.18

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 23 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/14/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/21/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.2	U
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	0.30	PJB
58-89-9	gamma-BHC (Lindane)	2.2	U
76-44-8	Heptachlor	0.32	PJB
309-00-2	Aldrin	0.12	J
1024-57-3	Heptachlor epoxide	2.2	U
959-98-8	Endosulfan I	0.12	PJ
60-57-1	Dieldrin	0.36	JB
72-55-9	4,4'-DDE	0.048	PJ
72-20-8	Endrin	0.19	PJ
33213-65-9	Endosulfan II	0.57	PJB
72-54-8	4,4'-DDD	0.23	PJB
1031-07-8	Endosulfan sulfate	0.47	PJ
50-29-3	4,4'-DDT	1.0	PJB
72-43-5	Methoxychlor	5.9	PJB
53494-70-5	Endrin ketone	4.3	U
7421-93-4	Endrin aldehyde	0.44	PJ
5103-71-9	alpha-Chlordane	2.2	U
5103-74-2	gamma-Chlordane	0.66	PJB
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	43	U
11104-28-2	Aroclor-1221	87	U
11141-16-5	Aroclor-1232	43	U
53469-21-9	Aroclor-1242	43	U
12672-29-6	Aroclor-1248	43	U
11097-69-1	Aroclor-1254	43	U
11096-82-5	Aroclor-1260	43	U

001484

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM82

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.19

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 16 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/21/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/23/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	0.18	J
319-85-7	beta-BHC	0.18	PJ
319-86-8	delta-BHC	0.29	PJB
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	0.16	PJB
309-00-2	Aldrin	0.15	PJ
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	3.9	U
72-55-9	4,4'-DDE	3.9	U
72-20-8	Endrin	3.9	U
33213-65-9	Endosulfan II	3.9	U
72-54-8	4,4'-DDD	3.9	U
1031-07-8	Endosulfan sulfate	3.9	U
50-29-3	4,4'-DDT	18	PB
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin ketone	3.9	U
7421-93-4	Endrin aldehyde	3.9	U
5103-71-9	alpha-Chlordane	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
8001-35-2	Toxaphene	480	B
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	80	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

001521

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM83

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.20

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 15 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/14/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/21/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

Q

CAS NO.	COMPOUND		
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	0.39	PJB
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	0.25	PJB
309-00-2	Aldrin	0.095	PJ
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	3.9	U
72-55-9	4,4'-DDE	4.9	
72-20-8	Endrin	3.9	U
33213-65-9	Endosulfan II	3.9	U
72-54-8	4,4'-DDD	3.9	U
1031-07-8	Endosulfan sulfate	3.9	U
50-29-3	4,4'-DDT	5.6	PB
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin ketone	3.9	U
7421-93-4	Endrin aldehyde	3.9	U
5103-71-9	alpha-Chlordane	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
8001-35-2	Toxaphene	62	JP
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	79	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

001560

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM84

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.21

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 16 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/21/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/23/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

Q

CAS NO.	COMPOUND		
319-84-6	alpha-BHC	0.14	J
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	0.40	PJB
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	0.31	PJB
309-00-2	Aldrin	0.18	PJ
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	3.9	U
72-55-9	4,4'-DDE	4.8	P
72-20-8	Endrin	3.9	U
33213-65-9	Endosulfan II	3.9	U
72-54-8	4,4'-DDD	3.9	U
1031-07-8	Endosulfan sulfate	3.9	U
50-29-3	4,4'-DDT	9.9	PB
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin ketone	3.9	U
7421-93-4	Endrin aldehyde	3.9	U
5103-71-9	alpha-Chlordane	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
8001-35-2	Toxaphene	220	BP
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	80	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

001615

1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM85

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM63

Matrix: (soil/water) SOIL

Lab Sample ID: 30848.22

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 20 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/21/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/23/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

Q

CAS NO.	COMPOUND		
319-84-6	alpha-BHC	2.1	U
319-85-7	beta-BHC	2.1	U
319-86-8	delta-BHC	0.23	PJB
58-89-9	gamma-BHC (Lindane)	2.1	U
76-44-8	Heptachlor	0.14	PJB
309-00-2	Aldrin	2.1	U
1024-57-3	Heptachlor epoxide	2.1	U
959-98-8	Endosulfan I	2.1	U
60-57-1	Dieldrin	4.1	U
72-55-9	4,4'-DDE	4.1	U
72-20-8	Endrin	4.1	U
33213-65-9	Endosulfan II	4.1	U
72-54-8	4,4'-DDD	4.1	U
1031-07-8	Endosulfan sulfate	4.1	U
50-29-3	4,4'-DDT	3.1	PJB
72-43-5	Methoxychlor	21	U
53494-70-5	Endrin ketone	4.1	U
7421-93-4	Endrin aldehyde	4.1	U
5103-71-9	alpha-Chlordane	2.1	U
5103-74-2	gamma-Chlordane	2.1	U
8001-35-2	Toxaphene	32	BJP
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	84	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	41	U

001653



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
HOUSTON BRANCH  
10625 FALLSTONE RD.  
HOUSTON, TEXAS 77099

MEMORANDUM



Date: October 6, 2000

Subject: Contract Laboratory Program Data Review

From: *Marvella Humphrey*  
Marvella Humphrey, Alternate ESAT RPO, 6MD-HC

To: B. Rhotenberry, 6SF-RA

Site : BPS, INC.

Case#: 28507

SDG# : MFJW63

The EPA Region 6 Houston Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP ) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package is acceptable for regional use. Problems, if any, are listed in the report narrative.

If you have any questions regarding the data review report, please call me at (281) 983-2140.

Attachments

cc: R. Flores, Region 6 CLP/TPO  
M. El-Feky, Region 6 Data Coordinator  
Files (2)



**LOCKHEED MARTIN SERVICES GROUP  
ESAT REGION VI  
10101 SOUTHWEST FREEWAY, SUITE 500  
HOUSTON, TEXAS 77074**

**MEMORANDUM**

**DATE:** October 5, 2000

**TO:** Melvin Ritter/Marvelyn Humphrey, ESAT RPO/Alternate  
RPO, Region VI

**FROM:** Tom Chiang, ESAT Team Manager, Region VI *Jan C.H. Uy*

**SUBJECT:** CLP Data Review

**REF:** TDF #6-1004A ESAT File No. I2454  
ESAT Contract No. 68-D6-0005

Attached is the data review summary for Case # 28507  
SDG # MEJW63  
Site BPS, INC.

**COMMENTS:**

**I. CONTRACTUAL ASSESSMENT OF DATA PACKAGE:**

CCS review found the data package contractually compliant.

Hard copy review detected the following contractually noncompliant item that CCS is not expected to detect.

The laboratory submitted the data package 2 working days late for the 14-day turnaround time requirement.

**II. TECHNICAL/USABILITY ASSESSMENT OF DATA PACKAGE:**

A total of 138 results were reviewed for this data package. Some results have been qualified because of technical problems. The significant problems are stated below.

- A. The antimony matrix spike recovery was below 75 percent.
- B. Blank concentrations affected some antimony and chromium results.

**III. OTHER AREAS OF CONCERN**

The sampler did not preserve the samples to the required temperatures.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 6  
HOUSTON BRANCH  
10625 FALLSTONE ROAD  
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 28507 SITE BPS, INC.  
LABORATORY AATS NO. OF SAMPLES 6  
CONTRACT# 68-W0-0086 MATRIX Soil  
SDG# MFJW63 REVIEWER (IF NOT ESD) ESAT  
SOW# ILM04.1 REVIEWER'S NAME S. Meekins  
ACCT# 050102DJN94 SF# 50102DDY COMPLETION DATE October 5, 2000

SAMPLE NO.	<u>MFJ-W63</u>	<u>MFJ-W67</u>	<u>      </u>	<u>      </u>	<u>      </u>
	<u>MFJ-W64</u>	<u>MFJ-W68</u>	<u>      </u>	<u>      </u>	<u>      </u>
	<u>MFJ-W65</u>	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>
	<u>MFJ-W66</u>	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>

DATA ASSESSMENT SUMMARY

	ICP	HG
1. HOLDING TIMES	<u>O</u>	<u>O</u>
2. CALIBRATIONS	<u>O</u>	<u>O</u>
3. BLANKS	<u>M</u>	<u>O</u>
4. MATRIX SPIKES	<u>M</u>	<u>O</u>
5. DUPLICATE ANALYSIS	<u>O</u>	<u>O</u>
6. ICP QC	<u>M</u>	
7. FAA QC		
8. LCS	<u>O</u>	<u>O</u>
9. SAMPLE VERIFICATION	<u>O</u>	<u>O</u>
10. OTHER QC	<u>O</u>	<u>O</u>
11. OVERALL ASSESSMENT	<u>M</u>	<u>O</u>

O = Data had no problems.

M = Data qualified because of major or minor problems.

Z = Data unacceptable.

N/A= Not applicable

**ACTION ITEMS:** The laboratory submitted the data package two working days late.

**AREAS OF CONCERN:** Blank concentrations affected some antimony and chromium results. The antimony matrix spike recovery was below 75 percent. The sodium and zinc serial dilution differences were above 10 percent.

**NOTABLE PERFORMANCE:**

**COMMENTS/CLARIFICATIONS  
REGION 6 CLP QA REVIEW**

**Case 28507 SDG MFJW63 Site BPS, INC. Lab AATS**

**COMMENTS:** The SDG consisted of six soil samples for total metals analysis by ILM04.1. The sampler designated samples MFJ-W67 and MFJ-W68 as field duplicates and sample MFJ-W64 as the QC sample. The reviewer noted the following contractually noncompliant item.

- The laboratory submitted the data package 2 working days late for the 14-day turnaround time requirement.

Fifty-six percent of the reported results were above the CRDL's. Some results were qualified because of problems with blank concentrations, a matrix spike recovery, and serial dilution differences. The technical usability of all reported results is indicated in the Data Summary Table (DST). An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the results were recorded in the Evidence Inventory Checklist.

**NOTE:** THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL ISSUES (BASED ON THE STATEMENT OF WORK) AND TECHNICAL ISSUES (BASED ON THE NATIONAL FUNCTIONAL GUIDELINES). THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS. THE ASSESSMENTS ARE DEFINED BELOW.

Acceptable = No results were qualified for any problems associated with this QC parameter.

Provisional = Some results were qualified because of problems associated with this QC parameter.

Unusable = All results are unusable because of major problems associated with this QC parameter.

1. **Holding Times:** Acceptable. The samples met contractual holding time criteria. Technical holding time criteria have not yet been established for soil samples. The laboratory reported a cooler temperature of 11.2°C, which is above the 4°C(±2°C) required by the SOW. Since the temperature was not excessive, the samples were not technically affected.
2. **Calibrations:** Acceptable. All calibrations met contractual requirements. The CRDL standard recoveries indicated acceptable instrument performance near the CRDL's.
3. **Blanks:** Provisional. Preparation and calibration blanks met contractual requirements although the laboratory reported 13 analytes in the blanks. The reviewer qualified the following results as indicated because of the laboratory blank concentrations.

The antimony results for samples MFJ-W63, MFJ-W64, MFJ-W66, and MFJ-W68 are considered undetected.

**INORGANIC QA REVIEW  
CONTINUATION PAGE**

**Case 28507 SDG MFJW63 Site BPS, INC. Lab AATS**

The chromium results for samples MFJ-W63, MFJ-W64, MFJ-W67, and MFJ-W68 are considered high biased.

4. **Pre-digestion Matrix Spike Recovery:** Provisional. The laboratory reported outlying matrix spike recoveries for antimony, selenium, silver, and zinc. The reviewer qualified as estimated and biased low the antimony results because the antimony matrix spike recovery was below 75 percent. The selenium, silver, and zinc matrix spike recoveries were only marginally outside the QC limits, so the reviewer did not qualify the selenium, silver, and zinc results.

5. **Duplicate Analysis:** Acceptable. Laboratory duplicate differences met technical QC criteria.

6. **ICP Quality Control:**

Serial Dilution: Provisional. The laboratory reported outlying serial dilution differences for sodium and zinc, so the reviewer qualified as estimated the sodium and zinc results. The sodium serial dilution result was lower than the undiluted result, indicating that matrix interferences enhanced the signal for sodium. So, the reviewer also qualified the sodium results as high biased. The zinc serial dilution result was higher than the undiluted result, indicating that matrix interferences suppressed the signal for zinc. Therefore, the reviewer also qualified the zinc results as low biased.

Interference Check Sample (ICS): Acceptable. The reported ICS results indicated satisfactory interelement and background corrections.

Coefficient of Variation: Acceptable. Replicate instrument readings were consistent.

7. **Furnace Atomic Absorption Quality Control:** Not Applicable.

8. **Laboratory Control Sample (LCS):** Acceptable. The laboratory reported acceptable LCS results, indicating satisfactory sample preparation and analysis.

9. **Sample Verification:** Acceptable. The laboratory correctly reported all sample results.

10. **Other QC:**

Field Duplicates: Acceptable. Field duplicate results were consistent.

**INORGANIC QA REVIEW  
CONTINUATION PAGE**

**Case 28507 SDG MFJW63 Site BPS, INC. Lab AATS**

- 11. Overall Assessment:** Sample result qualifications are summarized below.

The reviewer qualified four antimony and four chromium results because of laboratory blank effects.

The reviewer qualified all antimony, sodium, and zinc results because of matrix related problems.

## INORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the inorganic data review process.

- U** Undetected at the laboratory reported detection limit (IDL).
- L** Reported concentration is between the IDL and the CRDL.
- J** Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, FAA spike recovery, etc.
- R** Result is unusable.
- F** A possibility of a false negative exists.
- UC** Reported concentration should be used as a raised detection limit because of apparent blank contamination.
- ^** High bias. Actual concentration may be lower than the concentration reported.
- v** Low bias. Actual concentration may be higher than the concentration reported.

# INORGANIC DATA SUMMARY

Case No. : 28507

SDG : MFJW63

Reviewer : S. Meekins

Laboratory : AATS

Matrix : Soil

Units : mg/Kg

EPA Sample #=>	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
	MFJ-W63	MFJ-W64	MFJ-W65	MFJ-W66	MFJ-W67	MFJ-W68	
ALUMINUM	4190	5130	6540	7530	4450	5770	
ANTIMONY	0.91 LUCJv	1.1 LUCJv	0.46 U Jv	0.55 LUCJv	0.46 U Jv	0.72 LUCJv	
ARSENIC	7.2	5.8	8.4	8.4	8.3	6.8	
BARIUM	99.5	109	122	102	90.1	104	
BERYLLIUM	0.30 L	0.30 L	0.42 L	0.44 L	0.31 L	0.34 L	
CADMIUM	0.28 L	0.28 L	0.23 U	0.25 U	0.23 U	0.23 U	
CALCIUM	20700	17700	6430	14300	7550	9220	
CHROMIUM	6.4 JA	8.3 JA	9.0	9.8	6.7 JA	8.1 JA	
COBALT	4.8	6.7 L	6.3 L	7.4 L	7.1 L		
COPPER	14.6	17.5	12.3	13.6	8.1	9.2	
IRON	9230	12900	13200	16000	3500	3830	
LEAD	6.8	6.5	8.3	7.5	6.9	6.8	
MAGNESIUM	8140	10100	4460	7530	3610	4690	
MANGANESE	639	626	565	442	469	518	
MERCURY	0.08 L	0.08 L	0.08 L	0.11 L	0.07 L	0.08 L	
NICKEL	9.3	12.0	12.3	12.2	8.7 L	10.7	
POTASSIUM	747	1110 L	974 L	1040 L	777 L	836 L	
SELENIUM	0.46 U	0.51 U	0.46 U	0.49 U	0.46 U	0.47 U	
SILVER	0.23 U	0.25 U	0.23 U	0.25 U	0.23 U	0.23 U	
SODIUM	178 LJA	230 LJA	218 LJA	284 LJA	189 LJA	278 LJA	
THALLIUM	0.69 U	0.76 U	0.69 U	0.74 U	0.69 U	0.70 U	
VANADIUM	11.7	14.1	17.1	20.6	12.2	14.6	
ZINC	55.5 Jv	72.9 Jv	53.9 Jv	67.8 Jv	38.7 Jv	52.7 Jv	
% Solids :	84.6	75.5	85.5	79.0	84.7	85.0	



# INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 28507 SDG No. MFJW63 SDG Nos. To Follow \_\_\_\_\_ SAS No. \_\_\_\_\_ Date Rec 09/29/00

<p>EPA Lab ID: <u>AATS</u></p> <p>Lab Location: <u>Broken Arrow, OK</u></p> <p>Region: <u>6</u> Audit No.: <u>28507/MFJW63</u></p> <p>Resubmitted CSF? Yes _____ No <u>X</u></p> <p>Box No(s): <u>1</u></p> <p>COMMENTS:</p> <p>Over for additional comments.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">ORIGINALS</th> <th style="text-align: center;">YES</th> <th style="text-align: center;">NO</th> <th style="text-align: center;">N/A</th> </tr> </thead> <tbody> <tr> <td><b>CUSTODY SEALS</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1. Present on package?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>2. Intact upon receipt?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>FORM DC-2</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3. Numbering scheme accurate?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>4. Are enclosed documents listed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>5. Are listed documents enclosed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>FORM DC-1</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>7. Complete?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>8. Accurate?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>CHAIN-OF-CUSTODY RECORD(s)</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>9. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>10. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>TRAFFIC REPORT(s) PACKING LIST(s)</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>11. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>12. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>AIRBILLS/AIRBILL STICKER</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>13. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>14. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>15. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>SAMPLE TAGS</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>16. Does DC-1 list tags as being included?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>17. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>OTHER DOCUMENTS</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>18. Complete?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>19. Legible?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>20. Original?</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>20 a. If "NO", does the copy indicate where original documents are located?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> </tbody> </table>	ORIGINALS	YES	NO	N/A	<b>CUSTODY SEALS</b>				1. Present on package?	X			2. Intact upon receipt?	X			<b>FORM DC-2</b>				3. Numbering scheme accurate?	X			4. Are enclosed documents listed?	X			5. Are listed documents enclosed?	X			<b>FORM DC-1</b>				6. Present?	X			7. Complete?	X			8. Accurate?	X			<b>CHAIN-OF-CUSTODY RECORD(s)</b>				9. Signed?	X			10. Dated?	X			<b>TRAFFIC REPORT(s) PACKING LIST(s)</b>				11. Signed?	X			12. Dated?	X			<b>AIRBILLS/AIRBILL STICKER</b>				13. Present?	X			14. Signed?	X			15. Dated?	X			<b>SAMPLE TAGS</b>				16. Does DC-1 list tags as being included?	X			17. Present?	X			<b>OTHER DOCUMENTS</b>				18. Complete?	X			19. Legible?	X			20. Original?		X		20 a. If "NO", does the copy indicate where original documents are located?	X		
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Audited by: *Sonya Meekins*

Audited by: \_\_\_\_\_

Audited by: \_\_\_\_\_

Signature

Sonya Meekins / ESAT Data Reviewer

\_\_\_\_\_

\_\_\_\_\_

Printed Name/Title

Date 10/03/00

Date \_\_\_\_\_

Date \_\_\_\_\_

## TO BE COMPLETED BY CEAT

Date Recvd by CEAT: \_\_\_\_\_ Date Entered: \_\_\_\_\_ Date Reviewed: \_\_\_\_\_

Entered by: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Signature

Printed Name/Title

DC-2\_\_



United States Environmental Protection Agency  
Contract Laboratory Program

# Inorganic Traffic Report & Chain of Custody Record (For Inorganic CLP Analysis)

Case No.

28507

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier	6. Matrix (Enter in Column A)	7. Preservative (Enter in Column D)
		6	ADEQ	9/12/00	Fed Ex	1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)	1. HCl 2. HNO <sub>3</sub> 3. NaOH 4. H <sub>2</sub> SO <sub>4</sub> 5. K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> 6. Ice only 7. Other (specify in Column D) N. Not preserved
Regional Information		Sampler (Name)		Airbill Number			
		Terry Slight		8214 1334 0231			
Non-Superfund Program		Sampler Signature		5. Ship To			
		<i>[Signature]</i>		AATS 1700 West Albany Suite C Broken Arrow, OK 74012 ATTN: Deborah Inman			
Site Name		3. Purpose					
BPS, Inc.		Early Action <input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> RI <input checked="" type="checkbox"/> SI <input type="checkbox"/> ES		Long-Term Action <input type="checkbox"/> FS <input type="checkbox"/> RD <input type="checkbox"/> RA <input type="checkbox"/> O&M <input type="checkbox"/> NPLD			
City, State		Site Spill ID					
Helena, AR							

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E - RAS Analysis						Regional Specific Tracking Number or Tag Numbers	Station Location Identifier	Date/Time Sample Collection	Corresponding CLP Organic Sample No.	Sample Initials	Field QC Qualifier
					Disc. Metals	Total Metals	Cyanide	NO <sub>2</sub> /NO <sub>3</sub>	Fluoride	pH	Conduct					
MFTW63	5	L	G	6		X						6-199445	SS01	9/12/00 9:57	FGM63	TS
MFTW64	5	L	G	6		X						6-199448	SS02	9/12/00 9:52	FGM64	TS
MFTW65	5	L	G	6		X						6-183851	SS03	9/12/00 10:14	FGM65	TS
MFTW66	5	L	G	6		X						6-183854	SS04	9/12/00 10:45	FGM66	TS
MFTW67	5	L	G	6		X						6-183857	SS05	9/12/00 11:07	FGM67	TS
MFTW68	5	L	G	6		X						6-183860	SS06	9/12/00 11:07	FGM68	TS D&SS05
MFTW69	5	L	G	6		X						6-183863	SS07	9/12/00 9:17	FGM69	TS
MFTW70	5	L	G	6		X						6-183866	SB01	9/12/00 9:43	FGM70	TS

Shipment for Case Complete? <input checked="" type="checkbox"/> (N)	Page 1 of 3	Sample(s) to be Used for Laboratory QC MFTW64, MFTW69	Additional Sampler Signatures <i>[Signature]</i>	Chain of Custody Seal Number(s)
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## CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
<i>[Signature]</i>	9/12/00 1800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

DISTRIBUTION: Green - Region Copy  
White - Lab Copy for Return to Region

Pink - CLASS Copy  
Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS  
SEE REVERSE FOR PURPOSE CODE DEFINITIONS

371825



# **AMERICAN ANALYTICAL & TECHNICAL SERVICES, INC.**

1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

## **SDG NARRATIVE**

2

**CONTRACT: 68W00086**

**DATE: September 28, 2000**

**CASE: 28507**

**SOW NO.: ILM04.1**

**SDG: MFJW63**

**EPISODE NO.:44309**

### **INORGANIC METAL FRACTION:**

Six soil samples plus one prep blank, one lab control, one matrix spike and one matrix spike duplicate were submitted for ICP and Hg analysis. No major problems occurred during the digestion or analysis of these samples. The cooler temperatures at time of receipt were at 11.2 degrees Celsius. The cooler indicator bottle was present. The lab uses a mixture of ICV-1, ICV-2, ICV-3, and ICV-4 for the ICP Initial Calibrations Verification analysis. In order to obtain results for sodium and potassium within the calibration range of the TRACE ICP's, the ICV-1 reference solution is prepared at twice the dilution suggested for the ICV-1 preparation. The sample's analyses were completed according to the following:

#### **SWL SOP #**

SWL-IN-200

SWL-IN-202

#### **Method SOP is based**

ILM03.0/04.0 (digestion for ICP analysis)

ILM03.0/04.0 (analysis of Hg by cold vapor)

**Initial and Continuing Calibration Checks:** No problems.

**Initial and Continuing Calibration Blanks:** The following elements showed low level concentrations below the Contract Required Detection Limit in the Calibration Blanks: Al, Sb and Fe  
No action required.

**Linearity near the CRDL:** The CRI standard was outside of our in-house warning limits of 70-130%R for the following elements: Se  
No action required.

**Preparation Blanks:** The following elements showed low level concentrations below the Contract Required Detection Limit in the Preparation Blank: Ca, Cr, Cu, Fe, Ni and Zn  
No action required.

**Lab Control Spikes:** No problems.

**Matrix Spike:** The following elements were outside the control limits of 75-125% recovery: Sb, Se, Ag and Zn

All associated samples were flagged with an "N" on form I's. No action required.

**Duplicate:** The following elements were outside the control limits of 0-20% RPD: Al and Zn  
All associated samples were flagged with an "\*" on Form I's. No action required.

**Serial Dilution:** The water serial dilution were outside the control limits of 10% for the following elements: Na and Zn  
All associated samples were flagged with an "E" on Form I's. No action required.

Sincerely,



Steve Markham

Operations Manager

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW63

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW63

Matrix (soil/water): SOIL Lab Sample ID: 44309.01

Level (low/med): LOW Date Received: 09/13/00

% Solids: 84.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4190	-	*	P
7440-36-0	Antimony	0.91	B	N	P
7440-38-2	Arsenic	7.2	-		P
7440-39-3	Barium	99.5	-		P
7440-41-7	Beryllium	0.30	B		P
7440-43-9	Cadmium	0.26	B		P
7440-70-2	Calcium	20700	-		P
7440-47-3	Chromium	6.4	-		P
7440-48-4	Cobalt	4.5	B		P
7440-50-8	Copper	14.6	-		P
7439-89-6	Iron	9230	-		P
7439-92-1	Lead	6.8	-		P
7439-95-4	Magnesium	8140	-		P
7439-96-5	Manganese	639	-		P
7439-97-6	Mercury	0.08	B		CV
7440-02-0	Nickel	9.3	-		P
7440-09-7	Potassium	747	B		P
7782-49-2	Selenium	0.46	U	N	P
7440-22-4	Silver	0.23	U	N	P
7440-23-5	Sodium	178	B	E	P
7440-28-0	Thallium	0.69	U		P
7440-62-2	Vanadium	11.7	-		P
7440-66-6	Zinc	55.5	-	EN*	P
	Cyanide		-		NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW64

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW63

Matrix (soil/water): SOIL Lab Sample ID: 44309.02

Level (low/med): LOW Date Received: 09/13/00

% Solids: 75.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5130	—	*	P
7440-36-0	Antimony	1.1	B	N	P
7440-38-2	Arsenic	5.8	—	—	P
7440-39-3	Barium	109	—	—	P
7440-41-7	Beryllium	0.30	B	—	P
7440-43-9	Cadmium	0.28	B	—	P
7440-70-2	Calcium	17700	—	—	P
7440-47-3	Chromium	8.3	—	—	P
7440-48-4	Cobalt	6.7	B	—	P
7440-50-8	Copper	17.5	—	—	P
7439-89-6	Iron	12900	—	—	P
7439-92-1	Lead	6.5	—	—	P
7439-95-4	Magnesium	10100	—	—	P
7439-96-5	Manganese	626	—	—	P
7439-97-6	Mercury	0.08	B	—	CV
7440-02-0	Nickel	12.0	—	—	P
7440-09-7	Potassium	1110	B	—	P
7782-49-2	Selenium	0.51	U	N	P
7440-22-4	Silver	0.25	U	N	P
7440-23-5	Sodium	230	B	E	P
7440-28-0	Thallium	0.76	U	—	P
7440-62-2	Vanadium	14.1	—	—	P
7440-66-6	Zinc	72.9	—	EN*	P
	Cyanide		—	—	NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

## U.S. EPA - CLP

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW65

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW63

Matrix (soil/water): SOIL

Lab Sample ID: 44309.05

Level (low/med): LOW

Date Received: 09/13/00

% Solids: 85.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6540		*	P
7440-36-0	Antimony	0.46	U	N	P
7440-38-2	Arsenic	8.4			P
7440-39-3	Barium	122			P
7440-41-7	Beryllium	0.42	B		P
7440-43-9	Cadmium	0.23	U		P
7440-70-2	Calcium	6430			P
7440-47-3	Chromium	9.0			P
7440-48-4	Cobalt	6.3	B		P
7440-50-8	Copper	12.3			P
7439-89-6	Iron	13200			P
7439-92-1	Lead	8.3			P
7439-95-4	Magnesium	4460			P
7439-96-5	Manganese	565			P
7439-97-6	Mercury	0.08	B		CV
7440-02-0	Nickel	12.3			P
7440-09-7	Potassium	974	B		P
7782-49-2	Selenium	0.46	U	N	P
7440-22-4	Silver	0.23	U	N	P
7440-23-5	Sodium	218	B	E	P
7440-28-0	Thallium	0.69	U		P
7440-62-2	Vanadium	17.1			P
7440-66-6	Zinc	53.9		EN*	P
	Cyanide				NR

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:



1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW66

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW63

Matrix (soil/water): SOIL

Lab Sample ID: 44309.06

Level (low/med): LOW

Date Received: 09/13/00

% Solids: 79.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7530	-	*	P
7440-36-0	Antimony	0.55	B	N	P
7440-38-2	Arsenic	8.4	-	-	P
7440-39-3	Barium	102	-	-	P
7440-41-7	Beryllium	0.44	B	-	P
7440-43-9	Cadmium	0.25	U	-	P
7440-70-2	Calcium	14300	-	-	P
7440-47-3	Chromium	9.8	-	-	P
7440-48-4	Cobalt	7.4	B	-	P
7440-50-8	Copper	13.6	-	-	P
7439-89-6	Iron	16000	-	-	P
7439-92-1	Lead	7.5	-	-	P
7439-95-4	Magnesium	7530	-	-	P
7439-96-5	Manganese	442	-	-	P
7439-97-6	Mercury	0.11	B	-	CV
7440-02-0	Nickel	12.2	-	-	P
7440-09-7	Potassium	1040	B	-	P
7782-49-2	Selenium	0.49	U	N	P
7440-22-4	Silver	0.25	U	N	P
7440-23-5	Sodium	294	B	E	P
7440-28-0	Thallium	0.74	U	-	P
7440-62-2	Vanadium	20.6	-	-	P
7440-66-6	Zinc	67.8	-	EN*	P
	Cyanide		-	-	NR

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW67

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW63

Matrix (soil/water): SOIL Lab Sample ID: 44309.07

Level (low/med): LOW Date Received: 09/13/00

% Solids: 84.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4450	-	*	P
7440-36-0	Antimony	0.46	U	N	P
7440-38-2	Arsenic	6.3	-		P
7440-39-3	Barium	90.1	-		P
7440-41-7	Beryllium	0.31	B		P
7440-43-9	Cadmium	0.23	U		P
7440-70-2	Calcium	7550	-		P
7440-47-3	Chromium	6.7	-		P
7440-48-4	Cobalt	4.7	B		P
7440-50-8	Copper	8.1	-		P
7439-89-6	Iron	8500	-		P
7439-92-1	Lead	6.9	-		P
7439-95-4	Magnesium	3810	-		P
7439-96-5	Manganese	469	-		P
7439-97-6	Mercury	0.07	B		CV
7440-02-0	Nickel	8.7	B		P
7440-09-7	Potassium	717	B		P
7782-49-2	Selenium	0.46	U	N	P
7440-22-4	Silver	0.23	U	N	P
7440-23-5	Sodium	189	B	E	P
7440-28-0	Thallium	0.69	U		P
7440-62-2	Vanadium	12.2	-		P
7440-66-6	Zinc	38.7	-	EN*	P
	Cyanide		-		NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFJW68

Lab Name: AMERICAN\_ANALYTICAL\_AND\_T Contract: 68W00086

Lab Code: AATS Case No.: 28507 SAS No.: SDG No.: MFJW63

Matrix (soil/water): SOIL Lab Sample ID: 44309.08

Level (low/med): LOW Date Received: 09/13/00

% Solids: 85.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5770	—	*	P
7440-36-0	Antimony	0.72	B	N	P
7440-38-2	Arsenic	6.8	—	—	P
7440-39-3	Barium	104	—	—	P
7440-41-7	Beryllium	0.34	B	—	P
7440-43-9	Cadmium	0.23	U	—	P
7440-70-2	Calcium	9230	—	—	P
7440-47-3	Chromium	8.1	—	—	P
7440-48-4	Cobalt	5.4	B	—	P
7440-50-8	Copper	9.2	—	—	P
7439-89-6	Iron	9830	—	—	P
7439-92-1	Lead	6.8	—	—	P
7439-95-4	Magnesium	4590	—	—	P
7439-96-5	Manganese	518	—	—	P
7439-97-6	Mercury	0.08	B	—	CV
7440-02-0	Nickel	10.7	—	—	P
7440-09-7	Potassium	939	B	—	P
7782-49-2	Selenium	0.47	U	N	P
7440-22-4	Silver	0.23	U	N	P
7440-23-5	Sodium	278	B	E	P
7440-28-0	Thallium	0.70	U	—	P
7440-62-2	Vanadium	14.6	—	—	P
7440-66-6	Zinc	52.7	—	EN*	P
	Cyanide		—	—	NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

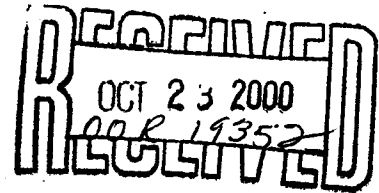
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
HOUSTON BRANCH  
10625 FALLSTONE RD.  
HOUSTON, TEXAS 77099



MEMORANDUM

Date: October 18, 2000

Subject: Contract Laboratory Program Data Review

From: *Marvelyn Humphrey*  
Marvelyn Humphrey, Alternate ESAT RPO, 6MD-HC

To: P. Ofosu, 6SF-RA

Site : BPS, INC.

Case#: 28507

SDG# : MFJW69

The EPA Region 6 Houston Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package is acceptable for regional use. Problems, if any, are listed in the report narrative.

If you have any questions regarding the data review report, please call me at (281) 983-2140.

Attachments

cc: R. Flores, Region 6 CLP/TPO  
M. El-Feky, Region 6 Data Coordinator  
Files (2)

**LOCKHEED MARTIN SERVICES GROUP  
ESAT REGION VI  
10101 SOUTHWEST FREEWAY, SUITE 500  
HOUSTON, TEXAS 77074**

**MEMORANDUM**

**DATE:** October 13, 2000

**TO:** Melvin Ritter/Marvelyn Humphrey, ESAT RPO/Alternate  
RPO, Region VI

**FROM:** Tom Chiang, ESAT Team Manager, Region VI

**SUBJECT:** CLP Data Review

**REF:** TDF #6-1009A ESAT File No. I2455  
ESAT Contract No. 68-D6-0005

Attached is the data review summary for Case # 28507  
SDG # MFJW69  
Site BPS, INC.

**COMMENTS:**

**I. CONTRACTUAL ASSESSMENT OF DATA PACKAGE:**

CCS reported that compliance could not be determined because of missing raw data.

Hard copy review detected the following contractually noncompliant item that CCS is not expected to detect.

The laboratory submitted the data package 3 working days late for the 14-day turnaround time requirement.

**II. TECHNICAL/USABILITY ASSESSMENT OF DATA PACKAGE:**

A total of 391 results were reviewed for this data package. Some results have been qualified because of technical problems. The significant problems are stated below.

- A. The antimony matrix spike recovery was below 75 percent.
- B. Blank concentrations affected some antimony, beryllium, and mercury results.
- C. Two thallium analyses had inconsistent instrument readings.

**III. OTHER AREAS OF CONCERN:**

The sampler did not preserve the samples to the required temperatures.

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION 6**

**HOUSTON BRANCH**

**10625 FALLSTONE ROAD**

**HOUSTON, TEXAS 77099**

**INORGANIC REGIONAL DATA ASSESSMENT**

CASE NO. <u>28507</u>	SITE <u>BPS, INC.</u>
LABORATORY <u>AATS</u>	NO. OF SAMPLES <u>17</u>
CONTRACT# <u>68-W0-0086</u>	MATRIX <u>Soil</u>
SDG# <u>MFJW69</u>	REVIEWER (IF NOT ESD) <u>ESAT</u>
SOW# <u>ILM04.1</u>	REVIEWER'S NAME <u>S. Meekins</u>
ACCT# <u>150102DJN01</u> SF# <u>50102DDY</u>	COMPLETION DATE <u>October 13, 2000</u>

SAMPLE NO.	<u>MFJ-W69</u>	<u>MFJ-W73</u>	<u>MFJ-W77</u>	<u>MFJ-W81</u>	<u>MFJ-W85</u>
	<u>MFJ-W70</u>	<u>MFJ-W74</u>	<u>MFJ-W78</u>	<u>MFJ-W82</u>	
	<u>MFJ-W71</u>	<u>MFJ-W75</u>	<u>MFJ-W79</u>	<u>MFJ-W83</u>	
	<u>MFJ-W72</u>	<u>MFJ-W76</u>	<u>MFJ-W80</u>	<u>MFJ-W84</u>	

**DATA ASSESSMENT SUMMARY**

	ICP	HG
1. HOLDING TIMES	<u>O</u>	<u>O</u>
2. CALIBRATIONS	<u>O</u>	<u>O</u>
3. BLANKS	<u>M</u>	<u>M</u>
4. MATRIX SPIKES	<u>M</u>	<u>O</u>
5. DUPLICATE ANALYSIS	<u>O</u>	<u>O</u>
6. ICP QC	<u>M</u>	
7. FAA QC		
8. LCS	<u>M</u>	<u>O</u>
9. SAMPLE VERIFICATION	<u>O</u>	<u>O</u>
10. OTHER QC	<u>O</u>	<u>O</u>
11. OVERALL ASSESSMENT	<u>M</u>	<u>M</u>

O = Data had no problems.

M = Data qualified because of major or minor problems.

Z = Data unacceptable.

N/A= Not applicable

**ACTION ITEMS:** The laboratory submitted the data package three working days late.

**AREAS OF CONCERN:** Blank concentrations affected some antimony, beryllium, and mercury results. The antimony matrix spike recovery was below 75 percent. The calcium, sodium, and zinc serial dilution differences were above 10 percent. Two thallium analyses had coefficients of variation greater than 20 percent. The sodium LCS result was outside the advisory limit.

**NOTABLE PERFORMANCE:**

**COMMENTS/CLARIFICATIONS  
REGION 6 CLP QA REVIEW**

**Case 28507 SDG MFJW69 Site BPS, INC. Lab AATS**

**COMMENTS:** The SDG consisted of 17 soil samples for total metals analysis by ILM04.1. The sampler designated sample MFJ-W69 as the QC sample and samples MFJ-W76/MFJ-W77 and MFJ-W83 and MFJ-W84 as field duplicate pairs. The reviewer noted the following contractually noncompliant item.

- The laboratory submitted the data package 3 working days late for the 14-day turnaround time requirement.

Fifty-six percent of the reported results were above the CRDL's. One manganese sample was diluted 2X because the manganese concentration was above the linear range. Some results were qualified because of problems with blank concentrations, a matrix spike recovery, an outlying laboratory control sample result, inconsistent instrument readings, and serial dilution differences. The technical usability of all reported results is indicated in the Data Summary Table (DST). An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the results were recorded in the Evidence Inventory Checklist.

**NOTE:** THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL ISSUES (BASED ON THE STATEMENT OF WORK) AND TECHNICAL ISSUES (BASED ON THE NATIONAL FUNCTIONAL GUIDELINES). THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS. THE ASSESSMENTS ARE DEFINED BELOW.

Acceptable = No results were qualified for any problems associated with this QC parameter.

Provisional = Some results were qualified because of problems associated with this QC parameter.

Unusable = All results are unusable because of major problems associated with this QC parameter.

1. **Holding Times:** Acceptable. The samples met contractual holding time criteria. Technical holding time criteria have not yet been established for soil samples. The laboratory reported a cooler temperature of 11.2°C, which is above the 4°C(±2°C) required by the SOW. Since the temperature was not excessive, the samples were not technically affected.
2. **Calibrations:** Acceptable. All calibrations met contractual requirements. The CRDL standard recoveries indicated acceptable instrument performance near the CRDL's.
3. **Blanks:** Provisional. Preparation and calibration blanks met contractual requirements although the laboratory

**INORGANIC QA REVIEW  
CONTINUATION PAGE**

**Case 28507 SDG MFJW69 Site BPS, INC. Lab AATS**

reported 13 analytes in the blanks. The reviewer qualified the following results as undetected because of the laboratory blank concentrations:

the antimony results for samples MFJ-W80, MFJ-W81, MFJ-W82, MFJ-W83, MFJ-W84, and MFJ-W85;

the beryllium results for samples MFJ-W72, MFJ-W73, MFJ-W74, MFJ-W75, MFJ-W76, MFJ-W77, and MFJ-W78; and

the mercury results for samples MFJ-W69, MFJ-W70, MFJ-W71, MFJ-W72, MFJ-W73, MFJ-W74, MFJ-W75, MFJ-W76, MFJ-W77, MFJ-W78, and MFJ-W79.

4. **Pre-digestion Matrix Spike Recovery:** Provisional. The laboratory reported outlying matrix spike recoveries for antimony, selenium, and silver. The reviewer qualified as estimated and biased low the antimony results because the antimony matrix spike recovery was below 75 percent. The selenium and silver matrix spike recoveries were only marginally below the QC limits, so the reviewer did not qualify the selenium and silver results.
5. **Duplicate Analysis:** Acceptable. Laboratory duplicate differences met technical QC criteria.
6. **ICP Quality Control:**

Serial Dilution: Provisional. The laboratory reported outlying serial dilution differences for calcium, sodium and zinc, so the reviewer qualified as estimated the associated sample results. The serial dilution results were higher than the undiluted results, indicating that matrix interferences suppressed the signals for calcium, sodium, and zinc. Therefore, the reviewer also qualified these results as low biased. On the DST, a bias flag was not recorded for 11 sodium results because of a conflicting bias indicated by the laboratory control sample (see section 8).

Interference Check Sample (ICS): Acceptable. The reported ICS results indicated satisfactory interelement and background corrections.

Coefficient of Variation: Acceptable. The reviewer qualified as estimated the thallium results for samples MFJ-W77 and MFJ-W82 because replicate instrument readings were inconsistent.

7. **Furnace Atomic Absorption Quality Control:** Not Applicable.



**INORGANIC QA REVIEW  
CONTINUATION PAGE**

**Case 28507 SDG MFJW69 Site BPS, INC. Lab AATS**

8. **Laboratory Control Sample (LCS):** Provisional. The laboratory reported a solid sodium LCS result that was outside the advisory QC limit. The high sodium LCS result indicated that the laboratory had difficulties conducting accurate analysis for sodium at a concentration far below the CRDL. Since the sodium concentrations in the associated samples had similar concentrations as the LCS result, the same problem may exist for these samples. Therefore, it is the reviewer's opinion that the high sodium LCS result indicated a high bias for all sodium results except the results for samples MFJ-W80, MFJ-W81, MFJ-W82, MFJ-W83, MFJ-W84, and MFJ-W85. However, on the DST, a bias flag was not recorded because of conflicting bias indicated by the serial dilution analysis (see section 6).
9. **Sample Verification:** Acceptable. The laboratory correctly reported all sample results.
10. **Other QC:**
- Field Duplicates: Acceptable. Field duplicate results were consistent.
11. **Overall Assessment:** Sample result qualifications are summarized below.

The reviewer qualified 6 antimony, 7 beryllium, and 11 mercury results because of laboratory blank effects.

The reviewer qualified all antimony, calcium, sodium, and zinc results because of matrix related problems.

The reviewer qualified two thallium results because of inconsistent instrument readings.

The reviewer qualified 11 sodium results because of difficulties conducting the sodium analysis.

## INORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the inorganic data review process.

- U** Undetected at the laboratory reported detection limit (IDL).
- L** Reported concentration is between the IDL and the CRDL.
- J** Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, FAA spike recovery, etc.
- R** Result is unusable.
- F** A possibility of a false negative exists.
- UC** Reported concentration should be used as a raised detection limit because of apparent blank contamination.
- ^** High bias. Actual concentration may be lower than the concentration reported.
- v** Low bias. Actual concentration may be higher than the concentration reported.

# INORGANIC DATA SUMMARY

Case No. : 28507

SDG : MFJW69

Reviewer : S. Meekins

Laboratory : AATS

Matrix : Soil

Units : mg/Kg

EPA Sample #=>	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
	MFJ-W69	MFJ-W70	MFJ-W71	MFJ-W72	MFJ-W73	MFJ-W74	MFJ-W75
ALUMINUM	960	5430	5490	6030	7530	7370	6200
ANTIMONY	0.65 U Jv	0.64 U Jv	0.69 U Jv	0.64 U Jv	0.63 U Jv	0.71 U Jv	0.64 U Jv
ARSENIC	1740	16	12	6.5	197	5.9	3.4
BARIUM	74.1	115	116	123	142	263	264
BERYLLIUM	0.22 L	0.22 L	0.43 L	0.43 LUC	0.45 LUC	0.50 LUC	0.43 LUC
CADMIUM	0.22 U	0.21 U	0.23 U	0.21 U	0.21 U	0.57 L	0.21 U
CALCIUM	76	720	150	1460	600	1730	1010
CHROMIUM	6.0	7.6	7.5	7.9	9.3	9.5	7.6
COBALT	2.2	6.3 L	6.3 L	7.3 L	7.3	7.1	4.9 L
COPPER	8.0	8.7	14.1	10.2	11.1	11.7	8.6
IRON	7520	8880	10100	15000	2500	2300	8070
LEAD	9.8	6.5	6.8	8.6	9.0	14.3	6.0
MAGNESIUM	1020	1620	1580	1580	1780	1690	911 L
MANGANESE	352	541	493	518	653	898	775
MERCURY	0.03 LUC	0.07 LUC	0.09 LUC	0.09 LUC	0.08 LUC	0.09 LUC	0.09 LUC
NICKEL	7.3 L	11.6	11.1	12.0	14.4	15.9	11.1
POTASSIUM	120	138	175	632	23	65	436
SELENIUM	0.87 U	0.86 U	0.92 U	0.85 U	0.84 U	0.94 U	0.85 U
SILVER	0.35 U	0.24 U	0.69 U	0.64 U	0.63 U	0.71 U	0.64 U
SODIUM	209 LJ	294 LJ	232 LJ	220 LJ	236 LJ	257 LJ	193 LJ
THALLIUM	1.3 U	1.3 U	1.4 U	1.3 U	1.3 L	1.2 U	1.3 U
VANADIUM	10.5 L	13.3	14.0	15.6	17.5	16.9	12.7
ZINC	43.3 Jv	40.8 Jv	39.6 Jv	42.1 Jv	44.2 Jv	51.2 Jv	33.6 Jv
% Solids :	89.5	91.3	82.8	91.7	91.6	80.9	92.2

# INORGANIC DATA SUMMARY

Case No. : 28507

SDG : MFJW69

Reviewer : S. Meekins

Laboratory : AATS

Matrix : Soil

Units : mg/Kg

EPA Sample #=>	FLAG MFJ-W76	FLAG MFJ-W77	FLAG MFJ-W78	FLAG MFJ-W79	FLAG MFJ-W80	FLAG MFJ-W81	FLAG MFJ-W82
ALUMINUM	7240	6940	4970	4720	9660	14300	11200
ANTIMONY	0.67 U Jv	0.66 U Jv	0.61 U Jv	0.83 U Jv	0.72 LUCJv	0.84 LUCJv	1.4 LUCJv
ARSENIC	6.4	6.0	6.6	8.2	9.6	7.8	34.6
BARIUM	161	152	106	121	300	161	859
BERYLLIUM	0.21	0.16 LUC	0.35 LUC	0.42 L	0.65 L	0.62 L	1.8
CADMIUM	0.22 U	0.22 U	0.20 U	0.28 U	0.36 L	0.30 L	1.1 L
CALCIUM	750 Jv	760 Jv	842 LJv	19500 Jv	2660 Jv	2310 Jv	7470 Jv
CHROMIUM	9.4	9.0	6.9	7.9	12.0	15.0	25.7
COBALT	6.1	7.8	5.6 L	8.3 L	10.8 L	17.7 L	45.3
COPPER	11.2	10.8	8.5	13.6	13.5	13.5	25.4
IRON	13200	12800	9020	11100	7800	18600	18400
LEAD	9.2	9.2	8.1	13.0	12.0	6.5	38.4
MAGNESIUM	1550	1600	1240	1570	1960	2230	2430
MANGANESE	773	657	500	1010	1730	814	6240
MERCURY	0.09 LUC	0.09 LUC	0.08 LUC	0.10 LUC	0.10 L	0.09 L	0.08 L
NICKEL	14.7	13.9	10.2	9.8 L	17.4	19.4	51.8
POTASSIUM	350	351 L	880 L	664 L	648 L	770 L	755 L
SELENIUM	0.89 U	0.88 U	0.81 U	1.1 U	0.48 U	0.48 U	0.48 U
SILVER	0.67	0.66 U	0.61 U	0.83 U	0.24 U	0.24 U	0.23 U
SODIUM	246 LJ	230 LJ	173 LJ	315 LJ	224 LJv	300 LJv	246 LJv
THALLIUM	1.3 U	1.3 U	1.4 L	1.7 L	0.72 U	0.71 U	1.8 LJv
VANADIUM	18.1	17.7	12.7	15.5	26.3	24.0	73.2
ZINC	43.5 Jv	45.5 Jv	36.0 Jv	106 Jv	58.1 Jv	56.5 Jv	120 Jv
% Solids :	88.0	88.0	94.2	69.1	80.4	80.1	84.1

# INORGANIC DATA SUMMARY

Case No. : 28507

SDG : MFJW89

Reviewer : S. Meekins

Laboratory : AATS

Matrix : Soil

Units : mg/Kg

EPA Sample #=>	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
	MFJ-W83	MFJ-W84	MFJ-W85				
ANTIMONY	1.7 LUCJv	1.6 LUCJv	1.3 LUCJv				
ARSENIC	3.2	35.1	0.4				
BARIUM	781	447	165				
BERYLLIUM			0.36				
CADMIUM	1.6	0.96 L	0.78 L				
CHROMIUM	14.7	18.5	10.4				
COPPER	25.1	19.4	17.0				
IRON	2500	1300	17800				
LEAD	41.3	35.8	13.1				
MAGNESIUM	170	150	2670				
MANGANESE	7050	4690	911				
MERCURY	0.03	0.03	0.03				
NICKEL	69.7	37.8	18.5				
SELENIUM	0.45 U	0.46 U	0.50 U				
SILVER	0.23 U	0.23 U	0.25 U				
SODIUM	270 LJv	216 LJv	259 LJv				
TANTALUM			0.75 U				
VANADIUM	57.2	64.3	21.1				
ZINC	114 Jv	93.0 Jv	65.4 Jv				
% Solids :	84.6	84.5	79.3				

# INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 28507 SDG No. MFJW69 SDG Nos. To Follow \_\_\_\_\_ SAS No. \_\_\_\_\_ Date Rec 10/02/00

EPA Lab ID: <u>AATS</u> Lab Location: <u>Broken Arrow, OK</u> Region: <u>6</u> Audit No.: <u>28507/MFJW69</u> Resubmitted CSF? Yes _____ No <u>X</u> Box No(s): <u>1</u> COMMENTS: _____  Over for additional comments.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">ORIGINALS</th> <th style="text-align: center;">YES</th> <th style="text-align: center;">NO</th> <th style="text-align: center;">N/A</th> </tr> </thead> <tbody> <tr> <td><b>CUSTODY SEALS</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1. Present on package?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>2. Intact upon receipt?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>FORM DC-2</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3. Numbering scheme accurate?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>4. Are enclosed documents listed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>5. Are listed documents enclosed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>FORM DC-1</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>7. Complete?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>8. Accurate?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>CHAIN-OF-CUSTODY RECORD(s)</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>9. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>10. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>TRAFFIC REPORT(s) PACKING LIST(s)</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>11. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>12. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>AIRBILLS/AIRBILL STICKER</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>13. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>14. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>15. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>SAMPLE TAGS</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>16. Does DC-1 list tags as being included?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>17. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>OTHER DOCUMENTS</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>18. Complete?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>19. Legible?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>20. Original?</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>20 a. If "NO", does the copy indicate where original documents are located?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> </tbody> </table>	ORIGINALS	YES	NO	N/A	<b>CUSTODY SEALS</b>				1. Present on package?	X			2. Intact upon receipt?	X			<b>FORM DC-2</b>				3. Numbering scheme accurate?	X			4. Are enclosed documents listed?	X			5. Are listed documents enclosed?	X			<b>FORM DC-1</b>				6. Present?	X			7. Complete?	X			8. Accurate?	X			<b>CHAIN-OF-CUSTODY RECORD(s)</b>				9. Signed?	X			10. Dated?	X			<b>TRAFFIC REPORT(s) PACKING LIST(s)</b>				11. Signed?	X			12. Dated?	X			<b>AIRBILLS/AIRBILL STICKER</b>				13. Present?	X			14. Signed?	X			15. Dated?	X			<b>SAMPLE TAGS</b>				16. Does DC-1 list tags as being included?	X			17. Present?	X			<b>OTHER DOCUMENTS</b>				18. Complete?	X			19. Legible?	X			20. Original?		X		20 a. If "NO", does the copy indicate where original documents are located?	X		
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Audited by: *Sonya Z Meekins*  
 Audited by: \_\_\_\_\_  
 Audited by: \_\_\_\_\_  

Signature

Sonya Meekins / ESAT Data Reviewer  
 \_\_\_\_\_  
 \_\_\_\_\_  

Printed Name/Title

Date 10/10/00  
 Date \_\_\_\_\_  
 Date \_\_\_\_\_

## TO BE COMPLETED BY CEAT

Date Recvd by CEAT: \_\_\_\_\_ Date Entered: \_\_\_\_\_ Date Reviewed: \_\_\_\_\_  
 Entered by: \_\_\_\_\_  
 Reviewed by: \_\_\_\_\_  

Signature

Printed Name/Title

DC-2



United States Environmental Protection Agency  
Contract Laboratory Program

# Inorganic Traffic Report & Chain of Custody Record (For Inorganic CLP Analysis)

Case No.

28507

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier	6. Matrix (Enter in Column A)	7. Preservative (Enter in Column D)
		6	ADEQ	9/12/00	Fed Ex	1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)	1. HCl 2. HNO3 3. NaOH 4. H2SO4 5. K2Cr2O7 6. Ice only 7. Other (specify in Column D) N. Not preserved
Regional Information		Sampler (Name)		Airbill Number			
		Terry Slight		8214 1334 0231			
Non-Superfund Program		Sampler Signature		5. Ship To			
		<i>[Signature]</i>		AATS 1700 West Albany Suite C Broken Arrow, OK 74012 ATTN: Deborah Timan			
Site Name		3. Purpose					
BPS, Inc.		Early Action Lead <input type="checkbox"/> SF <input type="checkbox"/> PRP <input checked="" type="checkbox"/> ST <input type="checkbox"/> FED		Long-Term Action <input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> RI <input checked="" type="checkbox"/> SI <input type="checkbox"/> ESI			
City, State		Site Spill ID					
Helena, AR							

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7) Other:	E - RAS Analysis							F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Date/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sample Initials	K Field QC Qualifier
					Diss. Metals	Total Metals	Cyanide	NO3/NO2	Fluoride	pH	Conduct.						
MFTW63	5	L	G	6	X							6-199445	SS01	9/12/00 9:37	FGM63	TS	
MFTW64	5	L	G	6	X							6-199448	SS02	9/12/00 9:52	FGM64	TS	
MFTW65	5	L	G	6	X							6-183851	SS03	9/12/00 10:14	FGM65	TS	
MFTW66	5	L	G	6	X							6-183854	SS04	9/12/00 10:45	FGM66	TS	
MFTW67	5	L	G	6	X							6-183857	SS05	9/12/00 11:07	FGM67	TS	
MFTW68	5	L	G	6	X							6-183860	SS06	9/12/00 11:07	FGM68	TS	DoFSS05
MFTW69	5	L	G	6	X							6-183863	SS07	9/12/00 9:17	FGM69	TS	
MFTW70	5	L	G	6	X							6-183866	SS01	9/12/00 9:43	FGM70	TS	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
(Y)	1 of 3	MFTW64, MFTW69	<i>[Signature]</i>	

## CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
<i>[Signature]</i>	9/12/00 1800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

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371825



United States Environmental Protection Agency  
Contract Laboratory Program

# Inorganic Traffic Report & Chain of Custody Record (For Inorganic CLP Analysis)

Case No.

28507

1. Project Code		Account Code		2. Region No. Sampling Co.		4. Date Shipped Carrier		6. Matrix (Enter in Column A)		7. Preservative (Enter in Column D)	
Regional Information		Sampler (Name)		Sampler Signature		Airbill Number		1. Surface Water		1. HCl	
Non-Superfund Program		3. Purpose		5. Ship To		ATTN: Deborah Inman		2. Ground Water		2. HNO <sub>3</sub>	
Site Name		Lead		Long-Term Action		1700 West Albany, Suite C		3. Leachate		3. NaOH	
City, State		Site Spill ID		ESI		Broken Arrow, OK		4. Field QC		4. H <sub>2</sub> SO <sub>4</sub>	
Helena, AR						74012		5. Soil/Sediment		5. K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	
								6. Oil (High only)		6. Ice only	
								7. Waste (High only)		7. Other (specify in Column D)	
								8. Other (specify in Column A)		N. Not preserved	
CLP Sample Numbers (from labels)		A Matrix (from Box 6)		B Conc. Low Med High		C Sample Type: Comp./Grab		D Preservative (from Box 7)		E - RAS Analysis	
		Other:								Low only High only	
										NO <sub>3</sub> Fluoride pH/Conduct	
MFJW71		S		L		G		6		X	
MFJW72		S		L		G		6		X	
MFJW73		S		L		G		6		X	
MFJW74		S		L		G		6		X	
MFJW75		S		L		G		6		X	
MFJW76		S		L		G		6		X	
MFJW77		S		L		G		6		X	
MFJW78		S		L		G		6		X	
F		Regional Specific Tracking Number or Tag Numbers		G Station Location Identifier		H Mo/Day/Year/Time Sample Collection		I Corresponding CLP Organic Sample No.		J Samples Initials	
6-183869		SB02		9-12-00 10:03		FGM71		TS		K Field QC Qualifier	
6-183872		SB03		9-12-00 8:56		FGM72		TS		B = Blank S = Spike	
6-183875		SB04		9-12-00 10:28		FGM73		TS		D = Duplicate	
6-183878		SB05		9-12-00 10:55		FGM74		TS		J = Pinstate	
6-183881		SB06		9-12-00 9:07		FGM75		TS		PE = Perform Eval	
6-183884		SB07		9-12-00 11:27		FGM76		TS		N = Not a QC Sample	
6-183887		SB08		9-12-00 11:27		FGM77		TS		DoS SB07	
6-183890		SB09		9-12-00 9:24		FGM78		TS			
Shipment for Case Complete? (Y/N)		Page 2 of 3		Sample(s) to be Used for Laboratory QC		Additional Sample Signatures		Chain of Custody Seal Number(s)			
(Y)						Vicky Perrett					

## CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[Signature]	9/12/00 8:00	Fed Ex	[Signature]		
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
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United States Environmental Protection Agency  
Contract Laboratory Program

**Inorganic Traffic Report  
& Chain of Custody Record**  
(For Inorganic CLP Analysis)

Case No.

28507

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier	6. Matrix (Enter in Column A)	7. Preservative (Enter in Column D)
		6	ADEQ	9/12/00	Fed Ex	1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)	1. HCl 2. HNO <sub>3</sub> 3. NaOH 4. H <sub>2</sub> SO <sub>4</sub> 5. K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> 6. Ice only 7. Other (specify in Column D) N. Not preserved
Regional Information		Sampler (Name)		Airbill Number			
		Terry S. Singh		8214 1334 0231			
Non-Superfund Program		Sampler Signature		5. Ship To			
		Terry Singh		AATS 1700 West Albany, Suite C Broken Arrow, OK 74012 ATTN: Deborah Inman			
Site Name		3. Purpose					
BPS, Inc.		Early Action Lead <input type="checkbox"/> SFV <input type="checkbox"/> PRP <input checked="" type="checkbox"/> ST <input type="checkbox"/> FED		Long-Term Action <input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> RI <input type="checkbox"/> SI <input type="checkbox"/> ESI			
City, State		Site Spill ID					
Helena, AR							

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7)	E - RAS Analysis							F. Regional Specific Tracking Number or Tag Numbers	G. Station Location Identifier	H. Mo/Day/Year/Time Sample Collection	I. Corresponding CLP Organic Sample No.	J. Sampler Initials	K. Field QC Qualifier
					Dist. Metals	Total Metals	Cyanide	NO <sub>2</sub> /NO <sub>3</sub>	Fluoride	pH	Conduct.						
MFTW 79	5	L	G	6	X							6-183893	SD01	9/12/00 14:41	FGM 79	TS	
MFTW 80	5	L	G	6	X							6-183896	SD02	9/12/00 13:23	FGM 80	TS	
MFTW 81	5	L	G	6	X							6-183899	SD03	9/12/00 13:39	FGM 81	TS	
MFTW 82	5	L	G	6	X							6-183902	SD04	9/12/00 13:56	FGM 82	TS	
MFTW 83	5	L	G	6	X							6-183905	SD05	9/12/00 14:17	FGM 83	TS	
MFTW 84	5	L	G	6	X							6-183908	SD06	9/12/00 14:17	FGM 84	TS	D of SD05
MFTW 85	5	L	G	6	X							6-183911	SD07	9/12/00 14:53	FGM 85	TS	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
0/N	3 of 3		Vicki Hewitt	

**CHAIN OF CUSTODY RECORD**

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Terry Singh	9/12/00 1500	Fed Ex			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
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421-012-13 REV.

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION 6**

**HOUSTON BRANCH**

**10625 FALLSTONE ROAD**

**HOUSTON, TEXAS 77099**

**ORGANIC REGIONAL DATA ASSESSMENT**

CASE NO.	<u>28507</u>	SITE	<u>BPS Inc.</u>
LABORATORY	<u>ATAS</u>	NO. OF SAMPLES	<u>3</u>
CONTRACT#	<u>68-W-00-066</u>	MATRIX	<u>Soil</u>
SDG#	<u>FGM68</u>	REVIEWER (IF NOT ESD)	<u>ESAT</u>
SOW#	<u>SOW OLM04.2</u>	REVIEWER'S NAME	<u>T. Y. Fan</u>
ACCT#	<u>150102DJN01</u>	SF#	<u>50102DDY</u>
		COMPLETION DATE	<u>October 11, 2000</u>

SAMPLE NO.'s: FG-M68 \_\_\_\_\_

FG-M69 \_\_\_\_\_

FG-M70 \_\_\_\_\_

\_\_\_\_\_

**DATA ASSESSMENT SUMMARY**

	BNA	PEST
1. HOLDING TIMES	<u>O</u>	<u>O</u>
2. GC/MS TUNE/INSTR. PERFORM.	<u>O</u>	<u>O</u>
3. CALIBRATIONS	<u>O</u>	<u>O</u>
4. BLANKS	<u>O</u>	<u>O</u>
5. SMC/SURROGATES	<u>O</u>	<u>O</u>
6. MATRIX SPIKE/DUPLICATE	<u>O</u>	<u>O</u>
7. OTHER QC	<u>O</u>	<u>M</u>
8. INTERNAL STANDARDS	<u>O</u>	<u>N/A</u>
9. COMPOUND ID/QUANTITATION	<u>O</u>	<u>M</u>
10. PERFORMANCE/COMPLETENESS	<u>O</u>	<u>O</u>
11. OVERALL ASSESSMENT	<u>O</u>	<u>M</u>

O = Data had no problems.

M = Data qualified due to major or minor problems.

Z = Data unacceptable.

NA = Not applicable.

**ACTION ITEMS:** The data package arrived 3 working days late.

**AREA OF CONCERN:** Coeluting toxaphene peaks interfered with the identification of many pesticides for samples FG-M68 and FG-M69. The field duplicates have inconsistent toxaphene results. The two-column quantitation results were inconsistent for toxaphene in two samples.

**NOTABLE PERFORMANCE:**

**COMMENTS/CLARIFICATIONS  
REGION VI CLP QA REVIEW**

**CASE** 28507 **SDG** FGM68 **SITE** BPS Inc. **LAB** ATAS

The following is a summary of sample qualifiers used by Region 6 in reporting this CLP data:

<u>No.</u>	<u>Acceptable</u>	<u>Provisional</u>	<u>Unacceptable</u>
BNA	<u>3</u>	<u></u>	<u></u>
PEST	<u>1</u>	<u>2</u>	<u></u>

**COMMENTS:** This SDG consists of three soil samples for BNA and Pest/PCB analyses by SOW OLM04.2. The OTR/COC Record designated sample FG-M69 as the QC sample and sample FG-M68 as the field duplicate of sample FG-M67 (in SDG FGM63). The BNA samples were analyzed following the low level method. The CRQL's required moisture correction for these soil samples and additional correction for the diluted analyses. The corrected CRQL's were reported by the laboratory and are referred to as sample quantitation limits (SQL's) in this report. The data package arrived 3 working days late for the contractual 14-day turnaround time. The laboratory is otherwise contractually compliant.

Pest/PCB samples FG-M68 and FG-M69 contain high concentrations of toxaphene, DDT, and DDE. Although many other pesticides were also reported as positive hits for these two samples, their identifications are questionable because of coeluting toxaphene interferences. The high DDT and/or DDE concentrations required the analyst to reanalyze these two samples at a dilution. No target compounds were detected at concentrations above the SQL's in Pest/PCB sample FG-M70 or in any of the BNA samples. The field duplicate samples have inconsistent toxaphene concentrations.

Some results are provisional for two Pest/PCB samples because of problems with coeluting toxaphene interferences, compound quantitation, and inconsistent field duplicate results. The technical usability of all reported results is indicated by ESAT's final data qualifiers in the Data Summary Table. An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the audit results were documented in the Evidence Inventory Checklist.

**NOTE:** THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL ISSUES (BASED ON THE STATEMENT OF WORK) AND TECHNICAL ISSUES (BASED ON THE NATIONAL FUNCTIONAL GUIDELINES). THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS. THE ASSESSMENTS ARE DEFINED BELOW.

**ORGANIC QA REVIEW  
CONTINUATION PAGE**

**CASE** 28507 **SDG** FGM68 **SITE** BPS Inc. **LAB** ATAS

Acceptable = No results were qualified for any problem associated with this QC parameter.  
Provisional = Some results were qualified because of problems associated with this QC parameter.  
Unusable = All results are unusable because of major problems associated with this QC parameter.

**1. Holding Times:** Acceptable. All samples met the contractual holding time criteria. No technical holding time criteria exist for the soil samples.

**2. Tuning/Performance:** Acceptable. DFTPP analyses met GC/MS tuning criteria. The Pest/PCB analyses met instrument performance guidelines.

**3. Calibrations:** Acceptable. TCL compounds met contractual calibration criteria. Two BNA analytes failed the technical %RSD and %D criteria. Since neither analyte was detected in the samples, result qualification is unnecessary, per Region 6 guidelines.

**4. Blanks:** Acceptable. The method and instrument blanks met contractual QC guidelines. The BNA method blank contains di-n-octylphthalate at a concentration below the CRQL. The Pest/PCB method blanks contain several pesticides and toxaphene at concentrations below the CRQL's. Results below the SQL's for the following analytes should be considered as undetected (U) because of laboratory contamination:

di-n-octylphthalate in all BNA samples;

δ-BHC and heptachlor in Pest/PCB samples FG-M68 and FG-M69;  
and

dieldrin, endosulfan II, endosulfan sulfate, DDT, and endrin aldehyde in Pest/PCB sample FG-M70.

**5. System Monitoring Compounds (SMC's)/Surrogates:** Acceptable. Surrogate recoveries are within the QC limits for all samples.

**6. Matrix Spike/Matrix Spike Duplicate (MS/MSD):** Acceptable. The MS recovery for BNA spike compound 2,4-dinitrotoluene exceeded the QC limit. Since this compound was not detected in the unspiked sample, result qualification is unnecessary. DDT has zero percent MS/MSD recoveries. The outlying DDT recoveries were caused by the high DDT concentration in the native sample. Therefore, no result was qualified. Other MS/MSD results met QC guidelines for precision and %recovery.

**ORGANIC QA REVIEW  
CONTINUATION PAGE**

CASE 28507 SDG FGM68 SITE BPS Inc. LAB ATAS

**7. Other QC:**

**Field Duplicates:** Provisional. The field duplicate results are consistent with one exception. The toxaphene concentrations differed by a factor of 4 for field duplicate samples FG-M68 and FG-M67 (SDG FGM63). The reviewer qualified the toxaphene concentration for sample FG-M68 as estimated and biased high. The qualification for the toxaphene concentration of sample FG-M67 (estimated and biased low) is addressed in the review report for SDG FGM63.

The endosulfan II results appeared inconsistent for samples FG-M68 and FG-M67 too. The reviewer did not qualify any results for this inconsistency because it was resulting from the inconsistent toxaphene results. The peaks identified as endosulfan II were actually coeluting toxaphene peaks (see sec. 9 below).

**8. Internal Standards (IS):** Acceptable. IS performance met the QC criteria for all BNA analyses.

**9. Compound Identity (ID)/Quantitation:** Acceptable. None of the samples contain BNA analytes at concentrations above the SQL's. High concentrations of toxaphene, DDT, and DDE caused the analyst to dilute and reanalyze Pest/PCB samples FG-M68 and FG-M69. No target compounds were detected at concentrations above the SQL's in Pest/PCB sample FG-M70. The reported target compounds met the identification criteria specified in the SOW. GC/MS confirmation is not required for the reported Pest/PCB results.

Coeluting toxaphene peaks interfered with identification of many pesticides on one or both columns. The analyst reported the coeluting toxaphene peaks as pesticides because they met the compound identification criteria. However, their identifications are technically questionable in the reviewer's opinion. The effects of the coeluting toxaphene interferences are summarized below.

- Results below the SQL's for the following analytes should be considered as undetected (U):

heptachlor epoxide, endosulfan I, dieldrin,  
methoxychlor, endrin ketone,  $\alpha$ -chlordane, and  
 $\gamma$ -chlordane in sample FG-M68 and

heptachlor epoxide, endosulfan I, dieldrin,  
 $\alpha$ -chlordane, and  $\gamma$ -chlordane in sample FG-M69.

**ORGANIC QA REVIEW  
CONTINUATION PAGE**

**CASE** 28507 **SDG** FGM68 **SITE** BPS Inc. **LAB** ATAS

- Results above the SQL's for the following analytes should be considered as undetected (U), and the reported concentrations should be used as raised quantitation limits:

endrin, endosulfan II, DDD, endosulfan sulfate, and  
endrin aldehyde in sample FG-M68 and

endrin, endosulfan II, DDD, endosulfan sulfate,  
methoxychlor, endrin ketone, and endrin aldehyde in  
sample FG-M69.

The reviewer qualified the laboratory "P"-flagged toxaphene results for samples FG-M68 and FG-M69 because the two-column concentrations differed by more than 25%.

**10. Performance/Completeness:** Acceptable. The data package is complete but contains some reporting errors. The laboratory was contacted for the needed corrections (see FAX Record Log).

**11. Overall Assessment:** Data are acceptable for all BNA samples and one Pest/PCB sample.

**Pest/PCB** Some results were qualified for samples FG-M68 and FG-M69 because of problems with toxaphene interference, inconsistent field duplicate results, and compound quantitation.

## ORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

- U Not detected at reported quantitation limit.
- N Identification is tentative.
- J Estimated value.
- L Reported concentration is below the CRQL.
- M Reported concentration should be used as a raised quantitation limit<sup>(1)</sup> because of interferences and/or laboratory contamination.
- R Unusable.
- ^ High biased. Actual concentration may be lower than the concentration reported.
- v Low biased. Actual concentration may be higher than the concentration reported.
- F+ A false positive exists.
- F- A false negative exists.
- B This result may be high biased because of laboratory/field contamination. The reported concentration is above 5X or 10X the concentration reported in the method/field blank.
- UJ Estimated quantitation limit.
- T Identification is questionable because of absence of other commonly coexisting pesticides.
- \* Result not recommended for use because of associated QA/QC performance inferior to that from other analysis.

**ORGANIC DATA SUMMARY**

Case No. : 28507

SDG : FGM68

Reviewer : T. Fan

Laboratory : ATAS

Matrix : Soil

Units : ug/Kg

SEMIVOLATILE EPA SAMPLE NUMBER :	FLAG FG-M68	FLAG FG-M69	FLAG FG-M70				
Benzene	390 U	370 U	360 U				
Phenol	390 U	370 U	360 U				
1,2-Dichloroethane	390 U	370 U	360 U				
2-Chlorophenol	390 U	370 U	360 U				
2-Methylphenol	390 U	370 U	360 U				
2,2'-oxybis(1-Chloropropane)	390 U	370 U	360 U				
Acetophenone	390 U	370 U	360 U				
4-Methylphenol	390 U	370 U	360 U				
N,N-Diethylpropylamine	390 U	370 U	360 U				
Hexachloroethane	390 U	370 U	360 U				
Nitrobenzene	390 U	370 U	360 U				
Isophorone	390 U	370 U	360 U				
2-Nitrophenol	390 U	370 U	360 U				
2,4-Dimethylphenol	390 U	370 U	360 U				
1,2-Dichloroethoxyethane	390 U	370 U	360 U				
2,4-Dichlorophenol	390 U	370 U	360 U				
Naphthalene	390 U	370 U	360 U				
4-Chloroaniline	390 U	370 U	360 U				
Hexachlorobenzene	390 U	370 U	360 U				
Caprolactam	390 U	370 U	360 U				
4-Chloro-3-methylphenol	390 U	370 U	360 U				
2-Methylnaphthalene	390 U	370 U	360 U				
Hexachlorocyclopentadiene	390 U	370 U	360 U				
2,4,6-Trichlorophenol	390 U	370 U	360 U				
2,4,5-Trichlorophenol	390 U	370 U	360 U				
1,1'-Biphenyl	390 U	370 U	360 U				
2-Chloronaphthalene	390 U	370 U	360 U				
2-Nitroaniline	980 U	920 U	910 U				
Dimethylphthalate	390 U	370 U	360 U				
2,6-Dinitrotoluene	390 U	370 U	360 U				
Acenaphthylene	390 U	370 U	360 U				
3-Nitroaniline	980 U	920 U	910 U				
Acenaphthene	390 U	370 U	360 U				
2,4-Dinitrophenol	980 U	920 U	910 U				
4-Nitrophenol	980 U	920 U	910 U				
Dibenzofuran	390 U	370 U	360 U				
2,4-Dinitrotoluene	390 U	370 U	360 U				
Diethylphthalate	20 LJ	370 U	27 LJ				
Fluorene	390 U	370 U	360 U				
4-Chlorophenyl-phenyl ether	390 U	370 U	360 U				
4-Nitroaniline	980 U	920 U	910 U				
4,6-Dinitro-2-methylphenol	980 U	920 U	910 U				
N-Nitrosodiphenylamine	390 U	370 U	360 U				
4-Bromophenyl-phenylether	390 U	370 U	360 U				
Hexachlorobenzene	390 U	370 U	360 U				
Atrazine	390 U	370 U	360 U				
Pentachlorophenol	980 U	920 U	910 U				
Phenanthrene	31 LJ	370 U	360 U				
Anthracene	390 U	370 U	360 U				
Carbazole	390 U	370 U	360 U				

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.



**ORGANIC DATA SUMMARY**

Case No. : 28507

SDG : FGM68

Reviewer : T. Fan

Laboratory : ATAS

Matrix : Soil

Units : ug/Kg

SEMIVOLATILE EPA SAMPLE NUMBER :	FLAG FG-M68	FLAG FG-M69	FLAG FG-M70				
Fluoranthene	77 LJ	370 U	360 U				
Butylbenzylphthalate	390 U	370 U	360 U				
3,3-Dichlorobenzidine	390 U	370 U	360 U				
Benzo(a)anthracene	51 LJ	370 U	360 U				
bis(2-Ethylhexyl)phthalate	390 U	71 LJ	360 U				
Benzo(b)fluoranthene	74 LJ	370 U	360 U				
Benzo(a)pyrene	47 LJ	370 U	360 U				
Dibenzo(a,h)anthracene	390 U	370 U	360 U				
Sample wt (g) :	30	30	30				
%Moisture :	15	10	9				
Dilution Factor :	1	1	1				
Level :	Low	Low	Low				
Number of TIC's :	9	15	7				

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

**ORGANIC DATA SUMMARY**

Case No. : 28507

SDG : FGM68

Reviewer : T. Fan

Laboratory : ATAS

Matrix : Soil

Units : ug/Kg


PESTICIDES/PCBs EPA SAMPLE NUMBER :	FLAG FG-M68	FLAG FG-M68DL	FLAG FG-M69	FLAG FG-M69DL	FLAG FG-M70		
alpha-BHC	2.0 U	6.0 U*	1.9 U	19 U*	1.9 U		
beta-BHC	2.0 U	6.0 U*	1.9 U	19 U*	1.9 U		
gamma-BHC (Lindane)	2.0 U	6.0 U*	1.9 U	19 U*	1.9 U		
Heptachlor	2.0 U	6.0 U*	1.9 U	19 U*	0.10 LJ		
Aldrin	2.0 U	6.0 U*	0.33 LJ	19 U*	1.9 U		
Heptachlor epoxide	2.0 U	6.0 U*	1.9 U	19 U*	1.9 U		
Endosulfan I	2.0 U	6.0 U*	1.9 U	19 U*	1.9 U		
Dieldrin	4.0 U	6.0 U*	3.8 U	2.5 U	3.6 U		
4,4'-DDE	45	45 *	110 *	120	0.18 LJ		
Endrin	4.8 UM	12 U*	5.0 UM	3.5 *	3.6 U		
Endosulfan II	11 UM	10 *	28 UM	29 *	3.6 U		
Endosulfan sulfate	5.8 UM	4.8 *	16 UM	16 *	3.6 U		
Methoxychlor	20 U	17 *	51 UM	62 *	0.72 LJ		
Endrin aldehyde	12 UM	16 *	44 UM	62 *	3.6 U		
gamma-Chlordane	2.0 U	0.84 *	1.9 U	19 U*	0.71 LJ		
Toxaphene	800 U	50 *	2100 U	1800 *	190 U		
Aroclor-1016	39 U	120 U*	37 U	370 U*	36 U		
Aroclor-1221	39 U	120 U*	37 U	370 U*	36 U		
Aroclor-1232	39 U	120 U*	37 U	370 U*	36 U		
Aroclor-1242	39 U	120 U*	37 U	370 U*	36 U		
Aroclor-1248	39 U	120 U*	37 U	370 U*	36 U		
Aroclor-1254	39 U	120 U*	37 U	370 U*	36 U		
Aroclor-1260	39 U	120 U*	37 U	370 U*	36 U		
Sample wt (g) :	30	30	30	30	30		
%Moisture :	15	15	10	10	9		
Dilution Factor :	1	3	1	10	1		

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

# INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 28507 SDG No. FGM68 SDG Nos. To Follow \_\_\_\_\_ SAS No. \_\_\_\_\_ Date Rec 10/2/00

<p>EPA Lab ID: <u>ATAS</u></p> <p>Lab Location: <u>875 Fee Fee Rd. Maryland Heights, MO 63043</u></p> <p>Region: <u>6</u> Audit No.: <u>28507/FGM68</u></p> <p>Re_Submitted CSF? Yes _____ No <u>X</u></p> <p>Box No(s): <u>1</u></p> <p>COMMENTS:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">Item</th> <th style="width: 95%;">Description</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">3</td> <td>The ending page of sec. 6f was a typo error, and the auditor made the appropriate correction.</td> </tr> <tr> <td style="text-align: center;">8</td> <td>The Form DC-1 reported that the OTR Record was absent although it was present in the CSF. The auditor corrected this error.</td> </tr> </tbody> </table> <p>Over for additional comments.</p>	Item	Description	3	The ending page of sec. 6f was a typo error, and the auditor made the appropriate correction.	8	The Form DC-1 reported that the OTR Record was absent although it was present in the CSF. The auditor corrected this error.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 85%;">ORIGINALS</th> <th style="width: 5%;">YES</th> <th style="width: 5%;">NO</th> <th style="width: 5%;">N/A</th> </tr> </thead> <tbody> <tr> <td colspan="4"><b>CUSTODY SEALS</b></td> </tr> <tr> <td>1. Present on package?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>2. Intact upon receipt?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td colspan="4"><b>FORM DC-2</b></td> </tr> <tr> <td>3. Numbering scheme accurate?</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>4. Are enclosed documents listed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>5. Are listed documents enclosed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td colspan="4"><b>FORM DC-1</b></td> </tr> <tr> <td>6. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>7. Complete?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>8. Accurate?</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td colspan="4"><b>CHAIN-OF-CUSTODY RECORD(s)</b></td> </tr> <tr> <td>9. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>10. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td colspan="4"><b>TRAFFIC REPORT(s) PACKING LIST(s)</b></td> </tr> <tr> <td>11. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>12. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td colspan="4"><b>AIRBILLS/AIRBILL STICKER</b></td> </tr> <tr> <td>13. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>14. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>15. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td colspan="4"><b>SAMPLE TAGS</b></td> </tr> <tr> <td>16. Does DC-1 list tags as being included?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>17. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td colspan="4"><b>OTHER DOCUMENTS</b></td> </tr> <tr> <td>18. Complete?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>19. Legible?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>20. Original?</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>20a. If "NO", does the copy indicate where original documents are located?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> </tbody> </table>	ORIGINALS	YES	NO	N/A	<b>CUSTODY SEALS</b>				1. Present on package?	X			2. Intact upon receipt?	X			<b>FORM DC-2</b>				3. Numbering scheme accurate?		X		4. Are enclosed documents listed?	X			5. Are listed documents enclosed?	X			<b>FORM DC-1</b>				6. Present?	X			7. Complete?	X			8. Accurate?		X		<b>CHAIN-OF-CUSTODY RECORD(s)</b>				9. Signed?	X			10. Dated?	X			<b>TRAFFIC REPORT(s) PACKING LIST(s)</b>				11. Signed?	X			12. Dated?	X			<b>AIRBILLS/AIRBILL STICKER</b>				13. Present?	X			14. Signed?	X			15. Dated?	X			<b>SAMPLE TAGS</b>				16. Does DC-1 list tags as being included?	X			17. Present?	X			<b>OTHER DOCUMENTS</b>				18. Complete?	X			19. Legible?	X			20. Original?		X		20a. If "NO", does the copy indicate where original documents are located?	X		
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Audited by: 

Audited by: \_\_\_\_\_

Audited by: \_\_\_\_\_

Signature

Tseng-Ying Fan/ESAT Data Reviewer

\_\_\_\_\_

\_\_\_\_\_

Printed Name/Title

Date 10/6/00

Date \_\_\_\_\_

Date \_\_\_\_\_

## TO BE COMPLETED BY CEAT

Date Recvd by CEAT: \_\_\_\_\_ Date Entered: \_\_\_\_\_ Date Reviewed: \_\_\_\_\_

Entered by: \_\_\_\_\_

Reviewed by: \_\_\_\_\_

Signature

Printed Name/Title

DC-2



& Chain of Custody Record  
(For Organic CLP Analysis)

28507

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier	6. Matrix (Enter in Column A)	7. Preservative (Enter in Column D)
		6	ADEQ	9/12/00	Fed Ex		
Regional Information		Sampler (Name)		Airbill Number			
		Terry Sigh		8214 1334-0210			
Non-Superfund Program		Sampler Signature		5. Ship To			
		[Signature]		A.T.A.S.			
Site Name		3. Purpose		875 FecFec Road			
BPS, Inc.		Early Action: CLEM, PA, REM, RIS, SI, ESI; Long-Term Action: FS, RD, RA, O&M, NPLD		Maryland Heights, MO			
City, State	Site Spill ID			ATTN: Rich Mannz			
Hekna, AR							

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc. Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 7)	E RAS Analysis			F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier
					VOA	BNA	High only: ARO/TOX						
FGM 63	5	L	G	5		X	X	6-199443-44	SS01	9/12/00 9:37	MFTW 63	T3	
FGM 64	5	L	G	5		X	X	6-199446-47	SS02	9/12/00 9:52	MFTW 64	T3	
FGM 65	5	L	G	5		X	X	6-199449-50	SS03	9/12/00 10:14	MFTW 65	T3	
FGM 66	5	L	G	5		X	X	6-183852-53	SS04	9/12/00 10:45	MFTW 66	T3	
FGM 67	5	L	G	5		X	X	6-183855-58	SS05	9/12/00 11:07	MFTW 67	T3	
FGM 68	5	L	G	5		X	X	6-183858-59	SS06	9/12/00 11:07	MFTW 68	T3	DoFSS05
FGM 69	5	L	G	5		X	X	6-183861-62	SS07	9/12/00 9:17	MFTW 69	T3	
FGM 70	5	L	G	5		X	X	6-183864-65	SB01	9/12/00 9:43	MFTW 70	T3	

Shipment for Case Complete? (CN)	Page 1 of 3	Sample(s) to be Used for Laboratory QC FGM 64, FGM 69	Additional Sample Signatures [Signature]	Chain of Custody Seal Number(s)
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Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[Signature]	9/12/00 1800	Fed Ex			
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

DISTRIBUTION: Blue - Region Copy  
White - Lab Copy for Return to Region

Pink - CLASS Copy  
Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2  
(2/98)

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS  
SEE REVERSE FOR PURPOSE CODE DEFINITIONS

382757

Original in SD6 FGM 63

In Reference to Case No(s):  
28507 SDG: FGM68 (O-2266)

**Contract Laboratory Program  
REGIONAL/LABORATORY COMMUNICATION SYSTEM**

**FAX Record Log**

**Laboratory Name:** ATAS  
**Lab Contact:** Robert Wilhelm  
**Region:** 6  
**Regional Contact:** Mahmoud El-Feky - EPA  
**ESAT Reviewer:** Tseng-Ying Fan - ESAT  
**FAX initiated by:**      Laboratory   X   Region

**In reference to data for the following fractions:**

SDG Narrative

**Summary of Questions/Issues:**

The semi-volatile section of the SDG Narrative contained several paragraphs that addressed problems for samples that did not belong to this SDG. The SDG Narrative was also missing the contract-required signature (OLM04.2, p. B-10, sec. 2.6.1). Please correct these errors and resubmit the SDG Narrative.

**NOTE:** Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 (OLM04.2, p. B-26, 2.7.3), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.

Please respond to the above items within 7 days to:

Mr. Mahmoud El-Feky  
U.S. EPA Region 6 Laboratory  
10625 Fallstone Road  
Houston, TX 77099

If you have any questions, please contact me at (281) 983-2128.

Mahmoud El-Feky  
Signature

10/12/00  
Date

**Distribution:** (1) Lab Copy, (2) Region Copy, and (3) ESAT Copy

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM68

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM68

Matrix: (soil/water) SOIL

Lab Sample ID: 30847.01

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8776.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 15 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

100-52-7	Benzaldehyde	390	U
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl) ether	390	U
95-57-8	2-Chlorophenol	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
98-86-2	Acetophenone	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy) methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
105-60-2	Caprolactam	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	980	U
92-52-4	1,1'-Biphenyl	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	980	U
131-11-3	Dimethylphthalate	390	U
606-20-2	2,6-Dinitrotoluene	390	U
208-96-8	Acenaphthylene	390	U
99-09-2	3-Nitroaniline	980	U
83-32-9	Acenaphthene	390	U

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM68

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM68

Matrix: (soil/water) SOIL

Lab Sample ID: 30847.01

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8776.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 15 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	980	U
100-02-7	4-Nitrophenol	980	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	20	J
86-73-7	Fluorene	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
100-01-6	4-Nitroaniline	980	U
534-52-1	4,6-Dinitro-2-methylphenol	980	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
1912-24-9	Atrazine	390	U
87-86-5	Pentachlorophenol	980	U
85-01-8	Phenanthrene	31	J
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-butylphthalate	29	J
206-44-0	Fluoranthene	77	J
129-00-0	Pyrene	75	J
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	51	J
218-01-9	Chrysene	62	J
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	50	BJ
205-99-2	Benzo(b)fluoranthene	74	J
207-08-9	Benzo(k)fluoranthene	23	J
50-32-8	Benzo(a)pyrene	47	J
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenz(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

(1) Cannot be seperated from Diphenylamine

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM68

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM68

Matrix: (soil/water) SOIL

Lab Sample ID: 30847.01

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8776.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 15 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 6.9

Extraction: (Type) SONC

Number TICs found: 9

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.45	330	J
2.	UNKNOWN	4.62	760	BJ
3.	UNKNOWN	5.08	370	J
4.	UNKNOWN	5.35	120	J
5.	UNKNOWN	5.78	600	J
6.	UNKNOWN	6.05	110	J
7.	UNKNOWN	7.48	240	BJ
8.	UNKNOWN	7.52	310	BJ
9.	UNKNOWN	20.34	150	J
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1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM69

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM68

Matrix: (soil/water) SOIL

Lab Sample ID: 30847.02

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8777.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 10 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 4.0

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

100-52-7	Benzaldehyde	370	U
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl) ether	370	U
95-57-8	2-Chlorophenol	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
98-86-2	Acetophenone	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy) methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
105-60-2	Caprolactam	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	920	U
92-52-4	1,1'-Biphenyl	370	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	920	U
131-11-3	Dimethylphthalate	370	U
606-20-2	2,6-Dinitrotoluene	370	U
208-96-8	Acenaphthylene	370	U
99-09-2	3-Nitroaniline	920	U
83-32-9	Acenaphthene	370	U

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM69

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM68

Matrix: (soil/water) SOIL

Lab Sample ID: 30847.02

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8777.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 10 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 4.0

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	920	U
100-02-7	4-Nitrophenol	920	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
86-73-7	Fluorene	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
100-01-6	4-Nitroaniline	920	U
534-52-1	4,6-Dinitro-2-methylphenol	920	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
1912-24-9	Atrazine	370	U
87-86-5	Pentachlorophenol	920	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	29	J
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	71	J
117-84-0	Di-n-octylphthalate	54	BJ
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenz(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) Cannot be seperated from Diphenylamine

000053

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM69

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM68

Matrix: (soil/water) SOIL

Lab Sample ID: 30847.02

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8777.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 10 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 4.0

Extraction: (Type) SONC

Number TICs found: 15

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.45	210	J
2.	UNKNOWN	4.61	860	BJ
3.	UNKNOWN	5.08	270	J
4.	UNKNOWN	5.35	90	J
5.	UNKNOWN	5.62	420	J
6.	UNKNOWN	5.78	920	J
7.	UNKNOWN	6.05	88	J
8.	UNKNOWN	7.48	240	BJ
9.	UNKNOWN	7.52	280	BJ
10. 605-48-1	ANTHRACENE, 9,10-DICHLORO-	14.16	90	JN
11.	UNKNOWN	15.09	150	J
12.	UNKNOWN	15.46	90	J
13.	UNKNOWN	19.45	130	J
14.	UNKNOWN	19.83	150	J
15.	UNKNOWN	20.32	240	J
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1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM70

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM68

Matrix: (soil/water) SOIL

Lab Sample ID: 30847.05

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8780.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 9 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

100-52-7	Benzaldehyde	360	U
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl) ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
98-86-2	Acetophenone	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy) methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
105-60-2	Caprolactam	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	910	U
92-52-4	1,1'-Biphenyl	360	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	910	U
131-11-3	Dimethylphthalate	360	U
606-20-2	2,6-Dinitrotoluene	360	U
208-96-8	Acenaphthylene	360	U
99-09-2	3-Nitroaniline	910	U
83-32-9	Acenaphthene	360	U

1D  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM70

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM68

Matrix: (soil/water) SOIL

Lab Sample ID: 30847.05

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8780.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 9 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

Extraction: (Type) SONC  
CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG Q

CAS NO. COMPOUND

51-28-5	2,4-Dinitrophenol	910	U
100-02-7	4-Nitrophenol	910	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	27	J
86-73-7	Fluorene	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
100-01-6	4-Nitroaniline	910	U
534-52-1	4,6-Dinitro-2-methylphenol	910	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
1912-24-9	Atrazine	360	U
87-86-5	Pentachlorophenol	910	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	27	J
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	87	BJ
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenz(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) Cannot be seperated from Diphenylamine

1G  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FGM70

Lab Name: ATAS, INC

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM68

Matrix: (soil/water) SOIL

Lab Sample ID: 30847.05

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: F8780.D

Level: (low/med) LOW

Date Received: 09/13/00

% Moisture: 9 decanted: (Y/N) N

Date Extracted: 09/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 09/18/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

Extraction: (Type) SONC

Number TICs found: 7

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.62	790	BJ
2.	UNKNOWN	5.08	100	J
3.	UNKNOWN	5.78	180	J
4.	UNKNOWN	7.49	220	BJ
5.	UNKNOWN	7.52	260	BJ
6.	UNKNOWN	17.48	120	BJ
7.	UNKNOWN	18.17	100	J
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1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM68

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM68

Matrix: (soil/water) SOIL

Lab Sample ID: 30847.01

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 15 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/21/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/22/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG / Q

CAS NO.	COMPOUND		
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	0.51	PJB
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	0.12	PJB
309-00-2	Aldrin	2.0	U
1024-57-3	Heptachlor epoxide	0.62	J
959-98-8	Endosulfan I	0.50	PJ
60-57-1	Dieldrin	1.7	PJB
72-55-9	4,4'-DDE	45	B
72-20-8	Endrin	4.8	PB
33213-65-9	Endosulfan II	11	PB
72-54-8	4,4'-DDD	12	B
1031-07-8	Endosulfan sulfate	5.8	B
50-29-3	4,4'-DDT	85	EB
72-43-5	Methoxychlor	13	PJB
53494-70-5	Endrin ketone	2.6	PJB
7421-93-4	Endrin aldehyde	12	PB
5103-71-9	alpha-Chlordane	0.31	PJ
5103-74-2	gamma-Chlordane	0.87	J
8001-35-2	Toxaphene	600	BP
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	79	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

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1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM69

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM68

Matrix: (soil/water) SOIL

Lab Sample ID: 30847.02

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 10 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/21/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/22/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 4.0

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/KG / Q

CAS NO.	COMPOUND		
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	0.56	PJB
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	0.090	PJB
309-00-2	Aldrin	0.33	PJ
1024-57-3	Heptachlor epoxide	0.40	PJ
959-98-8	Endosulfan I	1.2	PJ
60-57-1	Dieldrin	2.3	PJB
72-55-9	4,4'-DDE	110	PEB
72-20-8	Endrin	5.0	PB
33213-65-9	Endosulfan II	28	B
72-54-8	4,4'-DDD	16	PB
1031-07-8	Endosulfan sulfate	16	B
50-29-3	4,4'-DDT	270	EB
72-43-5	Methoxychlor	51	PB
53494-70-5	Endrin ketone	8.9	PB
7421-93-4	Endrin aldehyde	44	PB
5103-71-9	alpha-Chlordane	0.45	PJ
5103-74-2	gamma-Chlordane	0.62	PJ
8001-35-2	Toxaphene	2100	BP
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U



1E  
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FGM70

Lab Name: ATAS, INC.

Contract: 68-W-00-066

Lab Code: ATAS

Case No.: 28507

SAS No.:

SDG No.: FGM68

Matrix: (soil/water) SOIL

Lab Sample ID: 30847.05

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: \_\_\_\_\_

% Moisture: 9 Decanted: (Y/N) N

Date Received: 09/13/00

Extraction: (Type) SONC

Date Extracted: 09/14/00

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 09/20/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	0.20	PJ
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	0.10	PJ
309-00-2	Aldrin	1.9	U
1024-57-3	Heptachlor epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	0.55	JB
72-55-9	4,4'-DDE	0.18	PJ
72-20-8	Endrin	3.6	U
33213-65-9	Endosulfan II	0.44	PJB
72-54-8	4,4'-DDD	0.33	PJ
1031-07-8	Endosulfan sulfate	0.54	PJB
50-29-3	4,4'-DDT	1.6	PJB
72-43-5	Methoxychlor	0.72	PJ
53494-70-5	Endrin ketone	3.6	U
7421-93-4	Endrin aldehyde	0.85	PJB
5103-71-9	alpha-Chlordane	0.10	PJ
5103-74-2	gamma-Chlordane	0.71	PJ
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

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